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REVIEWS OF NEW BOOKS.

Monographia Anoplurorum Britanniæ, &c. &c. By Henry Denny. 8vo, pp. 263. London, 1842. H. G. Bohn.

THERE are subjects which invite criticism, and subjects which do not! Among the latter, most of our readers will, we presume, suppose that the *Anoplura* may be classed. But we have, as boastful and dishonest reviewers often say of themselves, a great duty to perform, and are not to be deterred from it by lions, tigers, foes, or friends; and therefore we grapple with the invaders of human decorum and comfort, made by Mr. Denny the objects of this essay. They are British—"Britanniæ;" that is, if possible, one recommendation. They are parasites, surely and well known to be a recommendation in many quarters. They are insects, and we must be predisposed to treat most tenderly the things so small. Their genera are here given according to the views of *Leach* and of *Nitzsch* (the German way of spelling Nits?); and the whole British species are explained in scientific accuracy, and engraved in frightful magnitude. But as an inducement to study them, *i. e.* (for why should we keep our unscientific readers any longer dangerously in the dark?) Lice, we are warned in the translated language of Linnæus, that "he who does not make himself acquainted with God from the consideration of nature, will scarcely acquire knowledge of him from any other source; for if we have no faith in the things which are seen, how should we believe those things which are not seen?"

Perhaps it may be, that some who look on this page may never have seen the "things" in question; but if they have not, it would be advisable in them to procure a few to contemplate, in order, through them, to acquire that divine knowledge alluded to by the Swedish philosopher, and be able to follow Mr. Denny and his compeers in their researches. In human affairs it would be otherwise; for therein the *noscitur à sociis* would be to the disadvantage of the brat or beggar. We are not, however, inclined to find fault with our naturalist for feeling the full importance of his theme. We love his dedication. To Sir W. Jardine, Bart. F.R.S.E., F.L.S., F.Z.S., &c. &c.; to R. Kaye Greville, Esq. *LL*.D., F.R.S., F.*L*.S., F.A.S.E., &c. &c.; to P. J. Selby, Esq., M.A., F.R.S.E., F.*L*.S.; to the Rev. L. Jenyns, M.A., F.*L*.S., F.Z.S., F.G.S.,* and to other eminent natural philosophers, the author inscribes his toil, in honour of their philanthropy and their assistance in giving his monograph all their services. The Industrious Fleas may now hide their diminished *heads* and chained limbs, for the *pediculidæ* are at the Head!

With regard to their first inroads upon man, Mr. Denny is inclined to agree with Kirby in his Bridgwater Treatise, that they did not make their first bite before the fall of Adam and Eve; and as Milton, in his *Paradise*, does not mention their agreeable company, we are disposed to think that they did not poetically occur till long after *that*,—perhaps some time before the *Lusiad* of Camoens, the earliest Epic, or A pick, that can be fancied to celebrate them. Aaron's rod is a decided epoch of their creation, or superabundant increase; if, indeed, the Hebrew word does not mean ticks, or gnats, or flies; and the thanks of the author are offered (p. xxiii.) to the following persons, who sent him at least a louse each (some of them many more) to facilitate his investigations, viz.:—"The Rev. Leonard Jenyns, A.M., of Swaffham Bulbeck, in Cambridgeshire; William Thompson, Esq., of Belfast; William M. Tweedy, Esq., of Truro; Sir William Jardine, Bart., of Jardine Hall, Dumfriesshire; Prideaux John Selby, Esq., of Twizell House, Northumberland; T. C. Heysham, Esq., of Carlisle; Professor Burmeister, of the University of Halle; William Wallace, Esq., of Douglass, Isle of Man; Dr. Southby, of Amersbury, Wiltshire; Wm. Milner, Esq., of Rochdale; Henry Doubleday, Esq., of Epping; Rev. William Little, of Kirkpatrick, juxta Moffat, Dumfriesshire; Mr. Abraham Clapham, of Potter Newton; Mr. Calvert, of Leeds; and Mr. G. R. Denny, of Norwich."

But it is time to handle the staple commodity so fully and foully illustrated in this elegant volume. Known to ancient and modern writers, to naturalists, and to a very considerable majority of the men, women, and children constituting the human race, the louse, "the creeping thing" of Scripture, the "wee burdie" of Scotland, and the "nameless" of polite society, belongs to the sub-kingdom Annulosa, and the class Insecta. Not to mention its orders, sub-orders, families, and sections, it boasts of genera Phthirius, Pediculus, Hæmatopinus, Philopterus, Trichodectes, Liotheum, and Gyropus; and of sub-genera no fewer than thirteen, which we need not particularise with all their hard names, only remarking that some of them are called, in honour of their discoverers, Nitzschia, Jardinia, Burmeisteria, Grevillia, Selbeia, and Denneia; and others, in allusion to their beauty, "gracilis," "tessellatus," "tricolor," "stellaris," &c. &c. &c. In some countries, we understand, the natives are prone to eat them, without regard to their species or peculiar forms; and thus in Africa, as well as on sunny days in Spain and Italy, it is no uncommon spectacle to see the tragedy of "The Biter bit." In this respect those imitative creatures, the monkeys, are apt to follow the example of the Hottentots, Spaniards, and Italians aforesaid, and thus effectually, by the aid of their teeth, clear themselves of the attachment to their persons of certain Trichodectes, and other varieties fond of monkey-tricks. Upon these points,—*i. e.* as connected with men and monkeys,—it may be important to quote that "Latreille states, that the louse found on the head of the negro is black, while that of civilised Europe is whitish. The former, I believe, he considers as a species, and designates it *nigritarum*; Stark queries its being any thing more than a variety of the *humanus*. If it is a variety at all, which I do not see any reason for supposing, it would more probably be of the Capitis. Blumenbach states, that from his own knowledge the human Pediculus is also found on the Simia Troglodytes, and on the Cercopithecus paniscus. I do not presume to dispute such high authority, but would venture to observe, that the species of this family approach in many cases so closely, that any person who had not examined very minutely would fail to detect the diagnostic marks, by which alone two similar species may be distinguished. I have found a Pediculus upon the green monkey, certainly very like the human species, but much smaller; and Dr. Burmeister enumerates one *Ped. Eurygaster*, from the Simia *Sinica*, and other monkeys, which he thus describes: 'Totus pallidus, segmentis abdominalibus haud bene terminatis, spiraculis segmenti quarti et quinti prominentibus fuscus.'"

In pursuing our notice of this valuable and interesting work, we shall, in order to avoid the repetition of the nasty and disgusting words louse and lice (however necessary in a philosophical sense and treatise), venture to substitute for the former the single letter L., and for the latter, being plural, the letters LL, which we beg our more refined readers to understand accordingly. For example, there are very many more lady LL.'s than there are gentlemen LL.'s; and one gentleman L. has, as the Turks have, a pretty considerable number of LL. wives. And, heavens! what families they have! Leeuwenhoek tells us:

"'The L. is so prolific an animal, that it is a common vulgar saying, that it will be a grandfather in the space of twenty-four hours. This I could never believe to be the fact, but rather that it would require nearly a month for the offspring of a L. to be capable of producing young of its kind; and in order to make proof of it by experiment, I at first proposed to hire some poor child to wear a clean stocking for a week, with two or three female LL. in it, and well tied or secured at the garter, in order to see how many young ones would be produced in that space of time; but I afterwards considered that I could make the experiment with much more certainty in my own person, at the expense only of enduring in one leg what most poor people are obliged to suffer in their whole bodies during all their lives. Hereupon I put on one leg, instead of a white under-stocking I usually wear, a fine black stocking, choosing that colour, because I considered that the eggs, and the young LL. thence proceeding, would be more easily distinguished upon it. Into this stocking I put two large female LL.; and cutting another black stocking into long slips, I bound it over the first above the knee, to prevent their escaping: after wearing this stocking six days, I took it off, and found one of the L. had laid fifty eggs, and the other about forty. I opened the one which had laid the fifty eggs, and found in its body at least fifty more, and who knows how many eggs it had laid before I put it into the stocking, and how many more eggs it might then have in its body which my sight could not reach? Having worn the stocking ten days longer, I found in it at least 25 LL. of three different sizes, some of which I judged were two days old, others a day

* We wish readers to be apprised, that the *L.*'s and *LL.*D's in these titular honours have nothing to do with successful inquiries into the natural history of the *Louse*, or discoveries respecting it, as might, as first sight, be imagined. In the one case the L indicates what the toastmaster at the Freemasons', on the anniversary, propounded as "the *Linnen* Society;" and in the other, double L, a Doctor of (c)laws.—*Ed. L. G.*

old, and the rest newly come out of the egg. To give a clearer conception of the great increase of these animals, let us suppose a person to have about his body two male LL. and as many females, and that the females in 12 days' time lay 200 eggs; and that six days afterwards out of these eggs are produced 100 males and as many females, and that this young brood in 18 days' time are grown to a size to propagate their kind, and that each of those young females in the space of 12 days more lays 100 eggs, and from which in six days' time other young LL. are produced; upon this supposition the number of LL. springing from two females will amount to 10,000. Thus it appears that two females may in eight weeks' time be grandmothers, and see 10,000 LL. of their own offspring, which, unless reduced to actual demonstration, would seem incredible; and who can tell whether in the heat of summer these creatures may not breed in half the time I have mentioned?'"

As an appropriate pendant to this L. and LL.-sy story, we add another of Mr. Denny's own, concerning the Phthirius inguinalis. It runs thus:—

"The accompanying insects were sent to me by a lady whom I attended for some years in Devonshire. The following is a slight sketch of her case. She was about fifty years of age, spare in person, of a highly susceptible temperament, and long subject to disordered digestion; suffering from severe headache, attended by biliary vomiting, and often followed by boils on or about the head. After a while, she informed me that she had been for some time troubled by insects coming apparently from the natural orifices of the body, and infesting the surface, particularly when warmer than usual. She complained especially of the annoyance caused by their presence in her eyes and ears, and subsequently about the neck of the bladder, and some other parts connected with external openings. She said that they were often numerous in her throat; and that they were more than once discovered adhering to matters ejected from the stomach, after having been for some time troubled by these parasites. They did not make any permanent lodgement on the surface, from which they were stated to be at times removed in great numbers; nor did they get among the hair. The lady was a person in whose veracity I had much confidence, very intelligent, well-informed, and religious. Her statement was in all its parts confirmed by a young woman who lived with her, partly as servant, partly as companion. She said, that being now and then called upon to sleep with her mistress, she was at such times greatly tormented by these insects, which she caught in numbers on her skin, but which had no tendency to continue or breed there. The only parts on which I ever saw them myself were the inner angles of the eyes, on the tarsal conjunctiva, and in the ears. The application of those external remedies which readily destroy the common species of pediculi, failed entirely in extirpating these; a variety of internal means were likewise used unavailingly, and the insects were not admitted to be sensibly diminished in number at the time of my quitting Devonshire; though the patient's general health had been a good deal benefited by the treatment. In fact, she considered that her feelings were on the whole most comfortable when these 'small deer' were disposed to take an airing."

It makes one itch to read these terrible legends,—far worse than that of the Bishop of Mentz and the rats; and though we have rather had notions of liking West of England dames, we would not have married this sample for a trifle! But to business: "The opinion that each and every animal has its own peculiar parasite is not borne out by facts; for although in the majority of cases a distinct species of insect is found upon each particular animal, *i. e.* quadruped or bird, yet there are several instances where the same kind infests three or four different species of birds; but in such exceptions they are almost always confined to individuals of the same genera or family, or at least to species of similar habits. This is more strictly the case with birds than quadrupeds. For instance, *Docophorus icteroides* I have found on nearly every species of duck which has come under my notice. I have received it from other birds also, but they were of aquatic habits, and belonging to the order Natatores. The *Nirmus obscurus* infests several species of sandpipers, godwits, &c. The *Nirmus rufus* upon several of the hawks and falcons; and *Docophorus Lari* upon nearly all the gulls. In the instances among quadrupeds, it is rather doubtful whether the species is common to two different animals or not, or whether they may not have been merely transferred by associating or frequenting the same place of abode; as, for example, the *Trichodectes scalaris* found upon both the ox and the ass: where the animals are feeding in the same stall, or sleep together, a transfer of property might easily be made. The *Hæmatopinus piliferus* infests dogs; and I have received specimens from the ferret, which last animal was said to swarm with them. Here it is rather difficult to account for the occurrence, as I am not aware that the two animals ever live upon friendly terms with each other; and moreover, the person from whom I received them informed me that he had not a dog. When we extend our observations to genera, we find they take a much wider range; and it is only in two or three cases that we could with any confidence assert that they were diagnostic of certain families of Vertebrata. It is easy to say whether they are belonging to quadruped or bird, but more difficult to pronounce the peculiar family of either, as some genera of each division appear perfect cosmopolites; as, for instance, the genus Pediculus of Linnæus (since divided into Pediculus and Hæmatopinus), besides infesting man, is also found in the orders *Quadrumana*, on monkeys; *Rodentia*, on the squirrel, hare, rabbit, water-rat; *Carnivora*, on the dog and seal; *Pachydermata*, on the swine, ass, and camel; *Ruminantia*, on the deer, ox, and buffalo. The genus Nirmus, again, is very extensively spread, infesting every order of birds but the *Gallinacea*. Docophorus all but *Gallinacea* and *Columbidæ*; Lipeurus infesting the orders *Gallinacea*, *Grallæ*, *Palmipedes*, and *Accipitres*; while, on the other hand, a few, as I have stated, are nearly certain indexes to the families: Eureum only on *Chelidones*, Trinoton only on *Palmipedes*, Goniocotes and Goniodes only on *Gallinacea* and *Columbidæ*, Gyropus only on the guinea-pig in this country."

It is curious that almost every bird and beast has its own L. or LL.; its Nirmus as well as Docophorus, its Goniocotes as well as Gonoides, its Lipeurus as well as Ornithobius. The chattering magpie and the sweet nightingale, the pretty titmouse and the soaring eagle, the jackdaw in its own plumes (unborrowed) and the peacock of sunny tail, the dusky raven and the splendid swan,—all, all have their own unpleasant companions; and ugly brutes they are—as may be seen by Mr. Denny's charmingly coloured plates, where above a hundred varieties are represented to the life; and of the lot, the most horribly offensive are the three particularly devoted to be friendly with human kind, and whose motto might be, *Nihil humanum a me alienum puto.*

Having ourselves rather a predilection for pussy-cats, we had a pleasure in meeting with the following notice:—

"3. TRICHODECTES SUBROSTRATUS. (*L. of the Domestic Cat.*)—Clypeus elongate, triangular; apex bituberculate. * * * That this species is a native of Britain there can be little doubt; but as I have sought it in vain, I am compelled to substitute in place of a general description, Dr. Burmeister's specific character."

And this, when the general favourite, dogs, and their children, puppies, swarm with Trichodectes latus! We only regret to find it stated in a postscript, that Mr. Denny, "since the work has been printed," has "procured several examples from a cat, which is periodically infested with multitudes of this species."

May we not, however, suggest that this is an exception to the general rule? The guinea-pig is troubled with a Gyropus ovalis; and the author kindly informs us, that the specimen he has described and pictured was "communicated by F. Billam, Esq. of Newall Hall, near Otley, and W. Milner, Esq. of Rochdale. Although the guinea-pig (Cavia cobaya) is said to be much infested with this parasite, I found it extremely difficult to obtain any specimens to describe."

These latter quotations have suggested to us the idea of a deficiency in the publication, viz. that it ought to have been embellished with a portrait of the author; say hunting or overlooking the furry coat of a cat, perhaps by its own electrical and sparkling light; and even a series of paintings of this kind might have been introduced with effect,—as, for instance, Mr. Billam with a guinea-pig between his knees, Dr. Burmeister fingering a weasel for its T. dubius, and the Rev. Mr. Jenyns, like Jupiter Ammon, purveying the creation of T. sphærocephalus throughout the woolly covering of a sheep. With such illustrations the work would have been perfect.

But we fancy that the major part of the *L. Gazette* readers (the L. here stands for Literary), will by this time feel that we have done enough for the volume before us: we shall therefore hasten to conclude. With the intent of precluding American piracy, and especially by the State of Lousiana, the copyright of this Monographia has been legally secured; and it has been duly entered and Licensed at Stationers' Hall. An advertisement announces that any homœopathist practitioner who may prefer pediculosity to the hitherto accustomed method of phlebotomy, for the taking of blood, may be provided with the means, and instructed in the use, by the Denny College, or on application to the publisher Mr. H. G. Bohn; and we are sure that all the "serious" portion of the community will be readily induced to afford their personal support to the objects of our author's acarite delineation and admiration, seeing that he thus recommends them to that sustenance in the language of the Psalmist:

"These wait all upon thee, that thou mayest give them their meat in due season.
That thou givest them they gather; thou openest thine hand, they are filled with good.
Thou hidest thy face, they are troubled: thou takest away their breath, they die and return to their dust."

Battles of the British Navy. By Joseph Allen, Esq., of Greenwich Hospital, author of "England's Wooden Walls," &c. 2 vols. small 8vo. 1842. London, Baily and Co.

COMMENCING with Richard the First's expe-

dition to the Holy Land, at the opening of the third crusade, Mr. Allen brings down the naval history of England to our late operations against Mehemet Ali,—thus beginning and ending our naval glories on the coast of Syria. The author, in his preface, confesses that he has omitted all mention of the gallant achievements of the naval force of Great Britain employed during the Burmese war in 1824-5, being unable to afford due space to the subject in his present work—a deficiency which he promises to remedy. Will he forgive us when we say, that there are other omissions, which must be supplied before the work he has now given us can be called THE *Battles of the British Navy?* It would not be difficult to point out some of these. As recording all the principal, and a large portion of the minor, actions of our navy, he is deserving of much praise; for the two volumes he has compiled, containing a digest from the best authorities, make a valuable, though not a perfect, work of reference. It must find its way into all naval libraries. It will be read by Jack as eagerly, if not as well, as his masters; possibly the sailor in the inferior grade will be the most indebted to the work. He likes to know the "rights o' things;" he has no voluminous library to refer to: and we trust every ship—now allowed, by the custom of the service, to have a seaman's library—will soon possess Allen's Naval Battles. The portraits of celebrated commanders which illustrate the volumes are excellent,—beside which, there are diagrams of the principal actions, which materially assist the reader; and the whole work is most creditable to the author and publisher. We doubt not, when it reaches a second edition, Mr. Allen will add considerably to its pages; and we should suggest the advantage of a comprehensive index to a work which is one so completely of reference: an index of names is not sufficient. There is a certain error of arrangement too, which our author would do well to correct; for example, in page 184 and the two succeeding ones, first volume, he gives the details of an affair which took place on the 28th of April, 1758; then makes mention of an expedition in June, whence he tries back to an engagement on the 29th of May; follows this up by relating a circumstance that occurred on the 25th; and winds up with a chase that commenced on the 21st, leading to an action on the 27th of the same month. Having said thus much to fulfil our critical duty, we will give some extract proving the author's generally clear style. Here is Richard I.'s expedition to the Holy Land:

"The first action which appears to come within the scope of this work occurs in the reign of Richard the First. The adventurous disposition of this prince is well known to have led him to undertake the expedition against the Saracens dignified in history as the 'Holy War.' 1191.—The large fleet fitted out to convey the troops to Syria sailed from England (but from what port is not recorded*) on the 9th or 10th day of April, 1191. This formidable fleet consisted of 150 sail of ships—fifty-two galleys, ten large ships laden with provisions and ammunition, and a great number of smaller vessels, commanded by King Richard in person. In the course of his voyage his fleet was overtaken by a gale, in which three ships, containing several of Richard's household; and many other persons of distinction were driven on shore near Limisso, or Limesol, in the island of Cyprus, and totally lost. Notwithstanding their distress, however, the tyrant or governor of the island refused to allow them to land; and those who were thrown on shore by shipwreck, were plundered of all they possessed, and made prisoners. Admittance to the harbour was also refused to the ships of Richard; and, enraged at such inhospitality, he determined on attacking the place. His troops speedily effected a landing, and, in the course of a few days, entirely subdued the country, sending the tyrant prisoner to Tripoli, seized much treasure, and received oaths of allegiance from a vast number of the chiefs of that island. On his passage from thence to Palestine, Richard, in the month of June, fell in with and took a large carrack belonging to the Saracens, carrying troops and ammunition to Acre. In the eventful siege of Acre by the combined troops of England and France, the fleet of Richard was anchored off the port, and effectually prevented supplies from being thrown in; and in the performance of this duty, defeated a large fleet of the enemy. In this action the Saracens were provided with fire-ships containing *ignis Græcus*—a composition of sulphur, pitch, and other combustible matter, which water could not extinguish; but they wanted time or firmness to make use of them. Acre surrendered on the 12th of July, 1191. History has not handed down the exact description of ships engaged in the above battle; but it is generally conjectured that a sort of vessel mostly resembling the galleys of the Eastern nations was that used by both parties."

In treating of the year 1718, Mr. Allen presents us with a despatch sent to Admiral Sir G. Byng by Captain Walton, which, he says, "deserves to be preserved, and a copy to be furnished to every captain in the British navy." It ran as follows:—

"'SIR,—We have taken and destroyed all the Spanish ships and vessels which were upon the coast; the number as per margin.—I am, &c.

Canterbury, off Syracusa, August 16, 1718.' G. WALTON.

"These ships as 'per margin,' consisted of four ships of war—the Royal, 60, bearing Rear-admiral Mari's flag; one ship of 50; one ship of 44; and one of 24 guns; with a bomb-vessel, and a ship laden with military stores,—captured. Those burnt were one of 54 guns; two of 40; and one of 30; with a fire-ship and bomb-vessel."

This laconic epistle reminds us that we too must be brief, as neither the nature of the work before us,—necessarily consisting of well-known matter,—nor our other *engagements*, permit us to make farther extract; but, with every true British heart, we wish and prophesy success to the *Battles of the British Navy.*

The Manœuvring Mother. By the Author of "The History of a Flirt." 3 vols. 12mo. London, Colburn.

THE *Manœuvring Mother* is a clever work; superficial it may be, but natural, amusing, harmless, and clever. Not an instructive work, nor a great work, nor a learned work, nor a work the result of thought and teeming with sage reflections; but a descriptive, life-like, clever work, written in an easy colloquial style. The characters may seem a little overdrawn to those of ordinary every-day life, yet are such to be met with in almost every circle, but more or less prominent according to their sphere of action; and therefore the most highly coloured in the story excite amusement and sympathy, rather than astonishment or doubt. They are, in truth, hit off with a light hand, but with a masterly touch.

The Manœuvring Mother, in the first part of the tale, is successful in establishing four young, beautiful, thoughtless daughters in marriage; and their respective careers with their different husbands occupy the remainder of the volumes. The following is descriptive of the early days of volatile seventeen wedded to intellectual forty-five:—

"Isabel privately confessed to her sisters that if she had only suspected what her matrimony was to end in, nothing should have induced her to marry. That beautiful cloak with the leopard's claw had been of no use; not once had she occasion to wear it. Boscawen made her read history for some hours every day, which she forgot as soon as she closed the books; then Boscawen worried her with lessons of geography, and expected her to understand accounts, and comprehend housekeeping—a thing she detested: perhaps when she became a mother she might have more power, but at present she was neither more nor less than a girl at school. Isabel took great notice of Christobelle; and while her elder sisters were absorbed in preparation for their approaching nuptials, she was her companion at all hours, and she loved to have her youngest sister constantly at her side. Mr. Boscawen freely indulged his lady in her love for Christobelle's society, and expressed himself pleased by her selection. 'I can have no objection, Isabel, to your youngest sister being with you; and, if you can obtain your father's consent, you can take her to Brierly. I like her turn for reading; you can read together. I do not wish you to be mixed up with the foolish preparations going on among your sisters and mother—jewels and dresses, all nonsense. I wish you to attend particularly to history, that you may not be wanting in necessary information; and I expect your mornings will be devoted to study as usual. Your youngest sister can be with you, and your studies may proceed together.' 'I thought this fortnight was to be a holyday, Mr. Boscawen,' said Isabel, mournfully. 'My dear Isabel, you have much to make up, and at your age much is acquired. I was distressed at hearing you assert to my sister a short time since that you could reach France by land.' 'Well, Mr. Boscawen, I did not know to the contrary.' 'But you ought to know, my dear Isabel; an ignorant woman at the head of a man's table is terrible. I am continually watching to repair your blunders.' 'I made no blunders before I married, Mr. Boscawen.' Mr. Boscawen gave a grim smile at Isabel's assertion, and patted her shoulder with kind feeling. 'Yes, you did, and those blunders amused me; but, my dear Isabel, a lover is charmed with faults and blunders which make a husband miserable; so read and improve yourself in knowledge. Chrystal is the best companion for you at Wetheral.' In consequence of Mr. Boscawen's wish, Isabel and Christobelle studied together; and the child of ten years of age was even better acquainted with the elements of knowledge than the woman of eighteen. Isabel had an insuperable objection to study of any kind; and when Mr. Boscawen left the sisters together for an hour, Isabel quitted her dull history to seize upon Christobelle's little collection of story-books, or else she vented her disappointed feelings in warning her never to marry at all, but particularly an old man. It was all vanity and vexation of spirit; she had never seen company at Brierly; and Mr. Boscawen determined to receive none till she could conduct her own establishment: that time would never arrive, for she never could order any thing but mutton-chops and mashed potatoes. And Miss Tabitha scolded and lectured in vain. However, Mr. Boscawen

* See Variety, p. 501.

said she might have Christobelle with her, and that was a blessing, for when she came, she might get out a little more. * * * Mr. Boscawen possessed but two failings; he had a most repulsive expression of countenance; and he married a young, laughing girl, hardly out of the nursery, who could not appreciate his extensive knowledge, and who could never prove the companion his intellectual taste coveted. Caught by the vivacity and beauty of a sprightly girl, he had vainly promised himself pleasure in superintending her education, and in leading her talents towards the stores which learning could bestow: mortification was the result of his anxiety. Mr. Boscawen was not the first wise man who fell in love, and fancied he could make a young creature happy by endeavouring to raise her capacity to his own level. Many have tried the experiment and failed, because they would not believe the sparkling eye could emanate from gay spirits unconnected with scope of intellect, and because they expected that age and gravity could assimilate with youthful feelings and youthful views. Isabel was not adapted to the sameness of her life at Brierly: had she married a man more suited to her time of life, her joyous spirit would have met the cares of this world with light-heartedness and in smiles; but the awful countenance of her husband ever resting upon her—his perpetual anxiety respecting her manners—his remarks, so gentle yet so sternly spoken—all pressed upon her mind and weighed down her spirits. Whenever Isabel spoke, her eye rested with alarm upon Mr. Boscawen; and it was evident she had been tutored into some degree of caution by the unwearied lectures of Miss Tabitha Boscawen upon the necessity of married ladies thinking before they spoke upon any subject. Lady Wetheral was enthusiastic in her praise of Isabel's improved appearance and manner; but her sisters and Miss Wycherly mourned over the change which had taken place."

But intellectual forty-five gradually succumbs to a sweet temper and an unopposing disposition; and a short extract from a long scene will exhibit the extent of the dominion achieved. Mr. Boscawen has taken the child to the nursery for a trifling disobedience, and on his return was met with,—

"'My love, did Tommy cry? Was he very much hurt—poor dear? Did you leave him crying?' 'My dear Isabel, you have brought this upon him, by not checking disobedience in the first instance. You have allowed the child twice to steal your wine.' 'My dear Boscawen—steal! indeed, that sounds dreadful! I hope my children will never steal! It was indeed my fault! Poor, dear child!—I dare say he is crying dreadfully now. Let me beg for my child, Boscawen.' 'Let him remain where he is, Isabel: he has been very naughty.' 'But I have taught him to steal, and I ought to suffer for him, dear Boscawen. Let me go to my child, my love!' The tears stood in Isabel's eyes, and Boscawen was still under their influence. He soothed his lady as fondly as when in earlier days she wept for the drooping ostrich feather. 'My dear Isabel, when we retire into the drawing-room, your child shall come down again. Don't weep, my love. I cannot wonder at your fondness, but he was very naughty. Wait a few moments, Isabel, and the child shall join us in the drawing-room. Don't let me see you weep—stay, I will bring him down to you.' Isabel smiled, and little Tommy was restored to her arms, as he entered the drawing-room. Mr. Boscawen felt he had acted unwisely by his child; but how could he resist Isabel in tears? Things were totally changed at Brierly. A tear from the bright blue eye of Isabel melted Boscawen's best resolves, and operated against the excellence of his own system of education. Isabel held the reins of government in her hands. She never argued with her husband—she never offered a word of opposition to his wishes—but she ruled by submission, and won his acquiescence by her tears and gentle self-upbraidings. Fortunately, her children possessed her own sweet disposition, which defied indulgence, or they might have suffered through Isabel's inability to check their budding faults. As it was, they loved her too well to persist in offending a parent so devoted; and it must have proved a very serious offence ere the light-hearted Isabel could lament conduct which was ever palliated by her affectionate heart. She was indeed the happiest of wives and mothers."

And the annexed remark is true:—

"It is temper which creates the bliss of home, or disturbs its comfort. It is not in the collision of intellect that domestic peace loves to nestle. Her home is in the forbearing nature—in the yielding spirit—in the calm pleasures of a mild disposition, anxious to give and receive happiness. In the sweet humility of Isabel, and in the indulgent forbearance of Boscawen, peace dwelt undisturbed by rival animosity; and she did not suffer those alarms which chase her timid presence from the hearth of the contentious, and from the bosom of the envious. Such was the blessed comfort and true charm of Brierly."

To give any thing like an adequate idea of the varied personages described in these pages would require a greater number of extracts than our space will permit, so different are the Ennismores from the Kerrisons, the Tom Pynsents from the Boscawens, and the multitude of distinct and well-defined characters engaged in the development of the story, from each other. With one other selection, from the close of the tale, and in contrast to the above, we conclude our notice:—

"Sorrows, renewed by the associations which pressed upon her mind, impelled Lady Ennismore to seek her mother's apartments. Mrs. Bevan was attending her mistress, and Julia's noiseless step glided across the carpeted floor of the dressing-room, where Lady Wetheral lay extended on the sofa, complaining to her attendant of her own wretched feelings. 'Bevan, I am very ill to-day: I cannot see Mrs. Tom Pynsent, or admit any one. My nerves become worse and worse, and I am in a dreadful state of tremor at this moment. I cannot hold my salts-bottle, it falls out of my poor nervous fingers—I am very ill to-day.' Mrs. Bevan spoke pleasing words of comfort, but her ladyship rejected them. 'Don't talk nonsense, Bevan. I hate to hear people say things which are not likely to occur. How can I expect to be well, when Miss Wetheral obstinately defies my wishes, and all my children are determined to fly in my face? I had a dream, too, last night, which increases my disorder; I dreamt I saw Lady Ennismore brilliantly dressed, walking in a procession; and she walked so stately in jewels, and her rank placed her so high among the great ones, that I was proud of my daughter, and I smiled to see her in grandeur. Poor Julia, where is she *now*!' 'She is here,' exclaimed Lady Ennismore, standing before her mother, with her thin hands crossed upon her bosom; 'here is the envied Countess of Ennismore!' Lady Wetheral gazed upon the vision in dumb amazement. 'Look at me,' continued Julia; 'look at my figure, and tell me if you believed all this would come to pass? When you assured me that wealth and rank was happiness and virtue, did you think I should return a fugitive, to seek shelter at your hands?' 'Julia!' gasped Lady Wetheral, 'Julia! go! who are *you*?' 'Go!' exclaimed Lady Ennismore, 'where shall I go? To Clara? Shall I rest with poor Clara? Must I be laid by poor Clara, to find peace after my sacrifice, my absence, and my griefs?' The tremor which attacked Lady Wetheral's frame was alarming. It precluded speech: she hid her face with her hands as Lady Ennismore proceeded. 'For quitting a husband's home I may be censured and avoided by the world, for it may never know my provocations and my struggles; but I should not be turned from my mother's presence! I should not be banished by the author of all my misery, as if she had no part in the misery which I endure!' 'Do not say so—oh, do not say so! Do not blame me, as Clara did!' Lady Wetheral sobbed aloud. 'I reproach no one,' answered Lady Ennismore, mournfully. 'I reproach no one, though I was promised happiness as the wife of Ennismore. Where is that happiness? You foretold it, mother. You said I should for ever enjoy wealth and station, and become the envied gaze of thousands! Where is it all?' 'Cease, cease!' cried Lady Wetheral, wrung by feelings of alarm and self-reproach. 'I wished you to marry Pynsent, Julia.' 'Cruel mother,' exclaimed Lady Ennismore, as she caught her hand, and looked earnestly in her face, 'do not say so, to drive me wilder than my poor brain feels now. Did you not hold up Ennismore to my view as a creature to worship? Did you not tell me his coronet was worth a daring grasp, if I could gain the courtly bauble? Oh, you bid me secure the lofty establishment—and I did so, and have suffered! I wish I was with poor dead Clara! We both turned from our father, and would not heed his mild precepts. We listened to projects which suited our ambitious nature, though he deprecated the unholy passion. Oh, mother, you fostered the wild and dangerous feeling. I wish I was laid by the side of Clara. I wish I was at rest, like her.' 'Bevan, Bevan,' ejaculated Lady Wetheral, 'where are you!' Mrs. Bevan curtsied as she stood in mute astonishment behind her lady's sofa. She was unable to speak: her eyes were riveted upon Lady Ennismore, who still grasped her mother's hand, and still continued her wild address. 'This has been a fearful affair! Two of us have fallen—one into the grave, and one into living sorrow—self-banished from a heartless home. Is it not a fearful thing?' 'Do not blame me, as Clara did—do not blame me for your flight, Julia,' said Lady Wetheral, endeavouring to withdraw her hand; but Lady Ennismore clasped it more closely. 'I blame no one—but two of us are lost for ever. I blame no one!'"

We have called this work uninstructive; and yet a lesson, and one of deep importance too, may be learned from even the light pages of an ephemeral novel. In this, the utter wretchedness of the bartered daughters, and the after-desolation of the manœuvring, match-making, miserable mother, may open the eyes of many, who are wholly occupied with the same views, to the hopelessness of happiness in ill-assorted although titled and wealthy unions.

Peregrine Bance; or, Settled at last. A Novel. By Theodore Hook, Esq. 3 vols. Bentley.

We can hardly bring ourselves to write even a brief notice of this posthumous work. Poor

dear Hook, what fun he would have made of the title, *Settled at last*, had it belonged to any pre-deceased author! But, in his own case, who could have the heart for the grave joking? though the poet's tomb in Westminster more naively than appropriately tells us,

"Life's a jest, and all things shew it—
I thought so once; but now I know it."

Of *Ben Bunce* we shall only observe, that it displays much of the writer's humour, and knowledge of life and character. His hero is a sort of *legere* Cœlebs; and his adventures involve much of the social *comique*, as well as many touches of world-wisdom, truth, feeling, and exemplary instruction. To beguile the hour, *Peregrine Bunce*, though finished by another hand, may rightly take its place along with the preceding fictious pictures of the age by our lamented friend, and afford both a laugh and a lesson to readers of every class.

Short Whist, by F. P. Watson, Esq.: *to which is added, Long Whist; with Instructions for Young Players*, by Admiral James Burney. Pp. 89. 1842. Boone.

A LADY, a friend of ours, was accustomed to say, "No English gentleman had completed his education till he could play whist well." Under a similar impression, perhaps, it is that Mr. Watson sends forth this *brochure*. It is chiefly adapted for those well advanced in the theory of the game, and, as he says, "has attractions chiefly for the experienced player;" to whom we recommend it as one of the proper studies to finish his education, quoting from the work a single line, which contains good advice for every one:—

"Never play for more than you can conveniently pay."

ARTS AND SCIENCES.

BRITISH ASSOCIATION.

GIVING the lead this week, as we have done in our last two Nos., to papers of more than common interest, though of a later period than the rest of our Report, we commence now with the Rev. Dr. Scoresby's paper on Magnetism; and have also to refer our readers, in its regular place, Section B, to Dr. Daubeny's important investigation of organic substances, by attention to which the cultivation of lands, and the agricultural produce of the country, may be so essentially benefited.

On improved Magnets, and the different modes of determining their powers, with an account of certain undescribed Phenomena in permanent Magnets.

[Communication by the Rev. Dr. Scoresby.]

Dr. Scoresby commenced by observing, that recent discoveries had advanced the position of magnetism to a place of the highest importance among the sciences. Hence, for the purpose of scientific investigation, the improvement of magnetical apparatus becomes of corresponding consideration. To this object his attention had long been directed, and the various conditions on which the best qualities of magnets depend had been extensively examined.

The grand difficulty which meets us in these researches is the want of coincidence in, and varying relations of, the two important qualities of capacity and tenaciousness, or capability of sustaining the tension of the magnetic condition: in certain cases, the lowest capacity in steel bars having the greatest permanency; and in others, the greatest capacity having the greatest permanency. And from this change it follows, that the relation of capacity and fixidity, either in kind or proportion, changes with every alteration in the relative proportions of the masses of the magnets, of their degree of hardness, and of their denomination and quality of steel. All these relations Dr. Scoresby had investigated with considerable labour, the results of which he hoped soon to place before the public.

The want of attention to these changing relations had occasioned many of the errors prevalently propagated as to the best construction of magnetical instruments, and the inferior quality of many of those in use. And from want of regard to the effect of the changing relations, conclusions drawn by persons eminent in science and accurate as experimentalists, have conveyed to the world most erroneous propositions,—true in the particular case investigated, erroneous in the extension of a supposed analogy to others.

Dr. Scoresby first explained the relations of different degrees of hardness and variety of mass on the respective powers of different magnets; and then proceeded to apply the principles to the improvement of powerful magnetic apparatus, shewing that, by means of hard plates, combined in a series of 192, a power nearly ten times as great as that attainable in the usual mode of tempering and combining massive bars, even in any amount of mass whatever, was realised. This result, in a pair of compound magnets so constructed, was exhibited in several striking experiments, such as the suspending of about 11,000 iron sprigs, and the moulding of them like the most plastic clay; the inducing of magnetism into a large key, at the distance of three to six inches from the magnet, so energetically as to suspend two or three other heavy keys in a chain; and the suspension of a tinned iron vessel against gravity, at the distance of nearly half an inch below the magnet, without contact. By this instrument, also, soft steel-bars were magnetised, and fully magnetised compass-needles thoroughly neutralised, with the intervention of the hand betwixt the magnet and the bar during the magnetising process.

The importance of these applications to sea-compasses was made to appear by reference to a diagram, in which the error on a ship's course, whilst sailing in a certain direction with respect to the wind (by reason of a sluggish compass), was shewn to be such as might issue in fatal results. In applying the principles developed for the testing of the qualities of compass-needles, it was shewn that, whilst ships' compasses may be vastly improved in both directive energy and permanency, their qualities may be easily tested; so that it would be as inexcusable for a respectable instrument-maker to put out of hand a bad compass, as for the Mint to issue a bad coin. In a small steel-bar exhibited by Dr. S., of the size of a compass-needle of the ordinary description, it was shewn that the influence of the large magnet which, with the hand intervened, destroyed the magnetism of a navy needle, had no perceptible effect on the vastly more powerful energy of his tested steel-bar; and the application of Dr. S.'s "test-bar," which destroyed the power of all ordinary needles subjected to its action, left this bar so powerful, that it was still able to support a key of above 3000 grains, being twice the power, or more, than that of any of the usual needles tried by Dr. S. in their highest state of magnetic saturation. Dr. S. mentioned, that of nine compass-needles sent him from the navy stores, none were half so powerful as this; whilst only two were capable of lifting a nail of about 600 grains weight; the steel of which they were composed being as bad as, or inferior to, that employed for coach-springs.

The application of the method of testing was further shewn in the construction of compound magnets of great power; so that permanent magnets might be obtained of still higher qualities than the very powerful one shewn to the Section. This was effected by removing from the combination not merely the very inferior bars or plates, but all such as should be found incapable of sustaining the highest degree of magnetic tension; the combination of the residue would produce the most powerful instruments.

In respect to the different methods of determining the powers of straight-bar magnets, or compass-needles, it was shewn by a tabular view of results of comparisons betwixt the methods of deviation (that employed by Dr. Scoresby) and that of torsion, that the former, when equated as described in a recent publication of Dr. S.'s on "Magnetical Investigations," is strictly accurate and incomparably the most convenient and rapid for general application, besides affording to the results obtained by different experimentalists the means of satisfactory comparison, of which the method of torsion is quite inadequate.

From these comparisons and tabular results it appeared that the ratios of the powers of a series of eight 6-inch magnet-bars, varying in energy from that of a very powerful combination to a thin plate of 160 grains' weight, were strictly correspondent, as determined by the two methods of deviations and torsions; that the ratios were equally correspondent when the comparison was instituted betwixt bars of various lengths; and that the powers of similar or proportional magnets of different lengths appeared not to be in proportion to their respective masses, as generally assumed; but the higher or greater power, proportionally to their mass, was in favour of the smaller bars; for the table of results, in the cases investigated, shewed that the power of a 6-inch bar compared with one of 2 feet, of the same kind of steel, degree of hardness, and of proportional magnitude and mass, was in the ratio of 1·88 to 1; or, in a comparison of a 3-inch bar with a proportional one of 24 inches, the ratio of power was above 2 to 1. How far these differences may arise from the difficulty of magnetising the interior particles of steel bars, or from the want of equal degree of hardness within the surface, had not been determined.

One of the phenomena, hitherto undescribed, proposed to be considered, consisted of the important fact in practical magnetics, of a considerable portion of the energy of the magnets, when in combination, being in an elastic suppression, so that, on the separation of the bars, a great increase of energy is exhibited in their individual powers. Thus, in a magnet of 10 bars, the maximum power was represented by 613— the tangent of the deviation produced by the magnet on the needle of the compass at two lengths' distance; but on the trial of the individual powers of the bars when again separated, the amount of their powers was found to be increased to 1345; shewing that one-half of the energy had been in elastic suppression. Hence the practical consideration, that bars, which, being tried separately after combination, are found to be but weakly magnetic, may actually detract (by having an opposite polarity) from the power of the compound instrument of which they constitute a part.

Another phenomenon alluded to was, the singular susceptibility of iron bars, and even of permanent magnets, to the influence of the earth's polarity, by which an effect of considerable permanency is produced.

SECTIONS.—SATURDAY.

SECTION A.

1. Mr. Fox Talbot, "On the Improvement of the Telescope."
2. Sir D. Brewster, "On Luminous Lines in certain Flames corresponding to the Defective Lines in the Sun's Light."
3. Sir D. Brewster, "On the Structure of a part of the Solar Spectrum hitherto unexamined."
4. Sir D. Brewster, "On the Luminous Bands in the Spectra of various Flames."
5. Mr. Rook, "On the Tidal Phenomena in the Bay of Fundy and the River de la Plata."
6. Dr. Reade, "Experiments on Magnetic Polarity connected with Electricity."
7. Mr. Hodgkinson, "On the Mode of conducting Experiments on the Resistance of Air."
8. Mr. Hodgkinson, "Notice of Experimental Inquiries on the Strength of Stones and other Materials."
9. Mr. A. Peacock, "On Decimal Fractions and a new Species of Logarithms." (Read by Sir W. Hamilton.)
10. Mr. Walker (of Plymouth), "On Oceanic Waves."

1. The improvement of the telescope appeared to Mr. Talbot a subject of promise two years ago, when he first heard of the success of the Earl of Rosse in casting large specula. He thought of the great advantages that would arise to astronomical science if large reflecting telescopes were more common. The principal hinderance to this is the expense. But Mr. Talbot conceived that if, as in the case of the Oxmantown, a perfect large speculum were once obtained, it might be multiplied by the electrotype. The copies, perhaps, may not be quite so perfect as the original, yet they may be sufficiently accurate to be fine and important instruments. The first great and obvious difficulty of the electrotype was with regard to the metal generally employed. Copper reflects light badly, and therefore was not suitable for a speculum. Mr. Talbot devised a method to overcome this difficulty. In the meantime he had conversed with Professor Wheatstone on the subject; and it transpired that the latter intelligent individual had been also engaged in similar investigations. The idea of the several white metals, platinum, palladium, nickel, silver, &c. had occurred to both; and Prof. Wheatstone had preferred platinum, which he employed for the purpose by precipitation, and had obtained a reflector of sufficient polish and power. Mr. Talbot had likewise, as stated, revolved those in his mind; but his especial thought was, whether the surface of copper might not be whitened, and thus a better reflecting surface obtained. He employed hyposulphuret of ammonia, which does turn copper white, and moreover conquers two evils, the deficient reflecting power, and the readily tarnishable surface. For, in fact, in the latter respect the copper is changed into a sulphuret, a stronger chemical compound than an oxide of copper, and therefore would not be acted on by the oxygen of the atmosphere. About a year ago, when Mr. Talbot was at Munich, Professor Steinheil shewed him what he considered a great novelty, namely, a method of making specula by means of the electrotype. Thus had the same notion occurred, and been practically carried out, by three eminent persons. The realisation by Prof. Steinheil was the precipitation of gold on a given speculum of copper. Mr. Talbot had thought gold would not be capable of reflecting sufficient light. It does, however, reflect more light than polished steel: and Mr. Talbot had witnessed, in a Gregorian telescope, commonly gilt, well-defined objects, although slightly tinged with yellow. The idea of Professor Steinheil, not only for the copying specula, but also other parts of the telescope, by the electrotype, had been much approved by German astronomers. In order to produce a fine gold surface, with copper back, by the electrotype, Prof. Steinheil had adopted a very ingenious and novel process. First, from the pure cyanide of gold was thrown down a gold film or coating to the required thickness; then the cyanide of copper, in certain proportions, was mixed with the salt of gold, and both precipitated as an alloy; and then increasing the salt of the less noble metal by degrees, a back of pure copper was obtained, with perfect adhesion throughout. The principal novelty of this is the two metals going down together; as hitherto the belief has been, that each would have passed over to the negative pole singly, in the order of their electric states.

But the large specula being thus easily and cheaply procured, the question remains, how the telescope, with the requisite gigantic framework, may be used. Professor Steinheil's plan was, to have the tube of a speculum, of 60 or 80 feet focal length, fixed in an invariable position, and pointing to the pole of the heavens; to have a plane mirror larger than the speculum placed over the axis revolving, to transmit the heavenly object to the parabolic reflector, and thence to the spectator. Other mechanical arrangements of a similar kind were proposed.

Sir W. Hamilton expressed his pleasure at having heard Mr. Talbot's communication, and particularly as to the mechanical arrangements, the want of which was felt even by those who had plenty of money at their disposal. The Earl of Rosse intended that his telescope should be movable only at the meridian; and Sir W. H. could at once see the advantage of the mirror-arrangement. As to the plan of multiplying copies of specula, he said their value would much depend on the correctness of the original. The speculum of Lord Rosse was unrivalled and unparalleled; and that nobleman was disposed to give every possible facility to any man of science wishing to make any experiments.

Mr. Holden said, that Lord Stanhope had invented and erected a telescope on the plan (as to the fixity of the framework) which Mr. Talbot recommended. The instrument was stationary, and he could sit still and view more than one-half the heavens, taking in even 20° behind his head, by means of an arrangement of mirrors.

Sir D. Brewster mentioned a similar plan, proposed twenty years ago by an American gentleman to the Royal Society of Edinburgh. There the mirror was not vertical, like Lord Stanhope's, but horizontal, consisting of a dish of metal in which a quantity of mercury was placed, and a rotatory motion was given to the disc, so that the mirror assumed a concave form, giving a parabolic surface, of the actual form required to reflect bodies; by which means a mirror was constructed in one instant of time. This appeared so impracticable to that society, that they did not venture to give any account of it in their memoirs; but now we saw something analogous to it. He thought the advantage would be greatly increased if, in place of the gold, a silver surface could be deposited, as it reflected nearly one-third more than gold. The reason why gold reflected more light than steel was, because its refractive power was greater. The difficulty of making a surface of silver would, he thought, be found considerable in practice, but some method might be discovered of removing the difficulty. A gentleman in Ireland had communicated to him a scheme for coating porcelain with platina similar to those vessels in ordinary use which had a metallic aspect. That attempt, he understood, was not successful; but the method seemed to be one which might be rendered useful by further experiments. In conclusion, Sir D. B. asked if the focus might not be shortened by a succession of mirrors, placed so as to reflect the image from one to another till it reached the point where it was wanted?

Mr. Fox Talbot said, he believed Professor Steinheil did use two mirrors, and said, that the multiplied reflection was not to be considered such an evil as he had supposed. The greatest difficulty was to get the first plane-mirror; but this once obtained, copies of it may easily be taken.

Sir T. M. Brisbane asked if taking copies would in any degree deteriorate the original.

Mr. Talbot: Not if well performed.

Sir W. Hamilton said, that one of the peculiarities of Lord Rosse's plan was, that he thought nothing of unpolishing a mirror in the morning, and having it ready for use again in the evening.

The Dean of Ely commented on the importance of the connexion of the sciences—of optics and chemistry in this instance. It is impossible to tell the extent of power to be gained.

2. After noticing Fraunhofer's beautiful discovery as to the phenomena of the line D in the prismatic spectrum, Sir D. Brewster said, he had received from Munich a splendid prism made for the British Association, one of the largest perhaps ever made; and, upon examining by it the spectrum of deflagrating nitre, he was surprised to find the red ray, discovered by Mr. Fox Talbot, accompanied by several other rays, and that this extreme red ray occupied the place of the line A in Fraunhofer's spectrum; and equally surprised to see a luminous line corresponding with the line B of Fraunhofer. In fact, all the black lines of Fraunhofer were depicted in the spectrum in brilliant red light. The lines A and B turned out in the spectrum of deflagrating nitre to be both double lines; and upon examining a solar spectrum under favourable circumstances, he found bands corresponding to these double lines. There was no light whatever in the solar spectrum corresponding to the luminous rays produced by the deflagration of nitre. What was the cause of this want of coincidence, it was very difficult to say; but the probability was, that the analogy extended over the whole range. He had looked with great anxiety to see if there was any thing analogous in other flames, and it would appear that this was a property which belonged to almost every flame.

3. Sir D. B. had, by means of the prism from Munich, been enabled to extend the solar spectrum from the point where, according to Fraunhofer, it terminated: he found one part to consist of about 16 lines, placed so near to each other that it was difficult to recognise the separation; but the lines, as they approached to Fraunhofer's A, were much nearer to each other than as they receded from it; consequently the whole of that portion of the spectrum appeared concave, resembling so much the scooped-out lines of a moulding on wood, that it was scarcely possible to suppose that the beholder was not looking at such a moulding. Sir D. B. was led to observe an analogous structure near the line B, or the extremity of the additional spectrum; and upon carrying on this comparison of structure of one part of the spectrum with that of another, it seemed to him, that by and by something important would result; for there was a repetition of a group of lines, and similar lines, through different parts of the spectrum, as if the same cause which produced them in one part produced them in another.

4. Sir D. B. had endeavoured to procure all the minerals and artificial salts and other combustible substances which could be obtained;

and, in order to have a suitable combustion, he used an oxygen light analogous to the Bude-light. Instead of the narrow aperture usual in these investigations, he had produced the same effect by allowing the light to fall obliquely on the prism. He had obtained 200 or 300 results, which he had not had any leisure to group; but he would mention some of the general results. When nitrate of lead was thrown into combustion, remarkably fine lines were produced in the spectrum. The luminous line D of Fraunhofer existed in almost every substance, especially in all into which soda entered—in the flame of a common tallow candle, for instance, owing to the muriate of soda existing in the tallow. In the nitrate of lead there existed a number of lines; also in the nitrate of barytes, silver, copper, and alum; in the nitrate of strontia in an especial manner. The nitrates of mercury, soda, ammonia, and bismuth, gave the lines very faintly. The hydrate of strontia gave the lines very remarkably, in yellow and green. The iodide of mercury did the same. The chlorides of ammonia, of platina, and of palladium, also shewed these lines. Also in that remarkable substance, the lithoxanthynate of ammonia, first discovered and published by Mr. Fox Talbot, the fine lines were seen throughout the whole length of the spectrum; and there was a remarkable blue band which he (Sir D. B.) had not distinctly recognised in any other flame. Indigo gave fine green and orange lines at equal distances from the D of Fraunhofer. Prussian blue did the same; calomel, nitrate of magnesia, litharge, also shewed lines; the sulpho-cyanite of potash gave a violet and orange flame, with the lines extremely distinct. He hoped, at the next year's meeting of the Association, to be able to embody these various results in a regular report.

Sir W. Hamilton said it was clear that these optical researches gave new definite characters to things, which it would be necessary to include in any new natural history of chemical compounds.

Mr. F. Talbot expressed his gratification that Sir D. Brewster had taken up this, perhaps the most curious branch of inquiry in the history of natural philosophy. Nothing was more extraordinary than the first fact discovered by Fraunhofer, that the double yellow ray, produced in most flames, especially when soda was in combustion, should answer exactly to the double black line in the solar spectrum; and still more extraordinary that the red ray of nitre should be answered by a corresponding deficiency in the solar spectrum—a total deficiency. This was one of the most unintelligible things in the history of natural philosophy. Mr. Talbot then expressed his opinion that the lavender-coloured rays, of which Sir J. Herschel had recently published an account as existing beyond the seven primitive colours, and beyond the violet, were identical with the anomalous gray rays, of which he (Mr. Talbot) had published an account several years ago, as existing in the flame of sulpho-cyanogen.

Sir D. Brewster said that he omitted to mention that the lines D were wanting in all spectra of the stars hitherto discovered. Fraunhofer, in his paper on the subject, stated he had found, in all the spectra of the stars he had examined, black lines, but not the bright line D. He (Sir D. Brewster), in making experiments on the light of some of the coloured stars, particularly the blue and red stars in many parts of the heavens, looking at them through a rock-salt prism at an angle of 79°, the largest angle that would transmit the light, and with Sir J. South's telescope, he found those black bands existing in the star, and that those coloured rays were wanting which would account for the peculiar colour of the star; so that the peculiar colour of red, orange, or green stars was to be explained by the want of those rays necessary to make white light. In the course of some further discussion, Mr. Talbot mentioned, that in a solar spectrum passed through iodine vapour, there was a repetition of the same dark band throughout the spectrum, at almost the same intervals; and the same with bromine and chlorine.

The chairman trusted that Sir D. Brewster would continue to apply the powerful means at his disposal, and his long and accurate habits of observation, to the continuance of the investigation, and the extension of these results.

5. Mr. Rook wished to generalise on the phenomena of the tides of the Bay of Fundy and the River de la Plata, and thereby include the whole tidal phenomena of the globe, which he attributed more to oceanic currents than to lunar influence.

6. Dr. Reade was checked more than once by the president for occupying the time of the Section with elementary and well-known facts and experiments; and finally the Dean of Ely appealed to the Section for support, and put it to them whether they would listen further to Dr. Reade's experiments. The feeling was decidedly with the chair, and the doctor gave way, not without promising, however, to publish his views; to which Dr. Peacocke replied that he was perfectly at liberty to do so, and that then the public would have an opportunity of appreciating their value.

7. Mr. Hodgkinson said, that, having been honoured by the Association with a request to pursue some experiments on the resistance of the air, he was desirous of exhibiting an instrument prepared for making the first series of these experiments. He proposed, in the first instance, to seek for the force of the wind moving at different velocities upon plane surfaces of given dimensions, these surfaces being either perpendicular or inclined at any angle to its current: to determine this he intended to place the apparatus upon the front of the first carriage of a railway-train; the road along which the train passed having for a short distance poles stuck up, one hundred or two hundred yards asunder. He would try the experiment only on days when there was no perceptible wind; and then, if the time in seconds, taken in passing between two poles, be carefully observed, and the pressure indicated upon the discs (which were of two feet and four feet area, both round and square), the resistance per square foot, with a given velocity, would be obtained. He hoped to determine these facts, with various velocities and at different angles of inclination in the discs, trying the same experiments with both discs at the same time, to ascertain whether the resistance to a square surface and a round one of equal area was the same, and that the results might correct each other. It would then be determined how far the law of resistance of air to planes moving obliquely through it agreed with the theoretical suppositions hitherto in use. To apply the result of the proposed experiments to the case of bodies at rest, acted upon by the wind, he assumed that the resistance of a body moving with a given velocity through the air at rest, was the same as that of the wind moving with the same velocity, and acting upon the body at rest. The directors of the Manchester and Birmingham Railway had kindly consented, at Mr. Buck's request, to allow him to make these experiments; and he was indebted to Mr. Fairbairn for the apparatus. This was placed on the table. It consists of two discs of wood (which may be round, square, or of any other form), made inclinable to any angle by means of screws that fix them to their position, and having two straight rods moving in slots, and an attached quadrant to measure the angle. To ascertain the force of the wind, one of Salter's balance-springs is placed behind each disc, attached to the cross-piece which connects the two rods of the discs; and this indicated the force of the wind at any moment. Several suggestions were made as to the instrument and the mode of trying the experiments, to which Mr. Hodgkinson said he would give every consideration.

8. Mr. Hodgkinson, after noticing the present state of knowledge on the subject, and the experiments of Barlow, Rennie, and of other experimentalists on the Continent, said, he had long felt anxious to ascertain how the three forces—the crushing, the tensile, and the transverse strength—and the position of the neutral line (that separating the extended and compressed fibres in a bent body)—were connected in bodies generally; and his experiments had for several years been directed to discovering facts upon each of these matters, in order to determine the question. His experiments some years ago, made for the British Association, with respect to the values of hot and cold blast iron, had shewn that the ratio of the forces of ultimate tension and compression was nearly constant in all the species of cast-iron; and a few experiments made at that time on sandstone and marble had led him to suspect that nearly the same would be the case in these and other hard bodies. Through the liberality of his friend Mr. Fairbairn (who had as usual given him every assistance his establishment afforded), he (Mr. Hodgkinson) had made a great many experiments upon wood, sandstones, marbles, glass, slate, ivory, bone, &c., to ascertain the tensile, the crushing, and the transverse strength of each; also, as far as possible, the situation of the neutral line in thirteen different kinds of timber (including oaks, pines, teak, &c.). All the three sorts of experiments were made, as far as possible, out of the same specimen in each case, to render the results as unexceptionable as they could be made. The wood was of good quality, and perfectly dry, having been chosen for this purpose, and laid in a warm, dry place for four years or more. Previous to experiment, the bars of wood were all reduced with care to the same dimensions, and afterwards weighed, to ascertain the specific gravity. They were then laid upon supports, to obtain the deflections with given weights, and the breaking-weight with its deflection. The two portions into which a specimen was broken were afterwards reduced in the middle by the lathe to the form used in Mr. Barlow's experiments, in order that the experiments might be torn asunder in the middle by a force acting directly through the axis, and thus to obtain the tensile strength of the wood. Afterwards the thick ends of the specimens were turned by the lathe into cylinders all of the same diameter and length, as nearly as practicable, and their exact dimensions afterwards taken, in order to ascertain by experiment the resistance of the woods to a crushing force. After describing the character and results of his experiments on the various substances named above (specimens of which he produced), Mr. Hodgkinson gave a summary of results of very numerous experiments

on marbles and stones of various degrees of hardness; from which it appeared that the ratio of the crushing force to the transverse force is nearly the same in glass, stone, and marble, including the hardest and the softest kinds. Hence, if we know the transverse strength, or the crushing strength, in any of these bodies, we may predict the other; and as glass and the hardest stones resist crushing with from seven to nine times the energy that they do being torn asunder, we may get an approximate value of the tensile force from the crushing force, or *vice versâ*. These results render it probable that the hardest bodies, whether cast-iron, glass, stone, or marble, admit of certain atomic displacements either in tearing asunder or crushing; these displacements being in a given ratio to each other, or nearly so. In future calculations as to the strength of bodies, the crushing strength ought to be made the fundamental datum, which I have recently done. The ratio of the transverse strength to the crushing strength is greater in cast-iron than in glass, marble, and sandstones, arising from the ductability of that metal. The necessity of enlarged inquiries in these matters will be seen when it is reflected that calculations of the transile strength of cast-iron, or marble, or stones in general, made from the transverse strength by the modes used by Tredgold, Napier, and others, give the transile strength twice or three times as great as it ought to be.

It is unnecessary to enter more at length into the details of Mr. Hodgkinson's valuable communication, as it was only a portion of a more full and perfect paper to be read before the Royal Society.

9. Sir W. Hamilton then briefly explained the first theorem of a communication on decimal fractions, and a new species of logarithms, sent by Mr. A. Peacock, declaring that he could not state that it was new. He feared that Prof. Jacobi would find in it only something with which he was already acquainted.

Prof. Jacobi said that the method was very largely explained by Gauss, in his researches.

Prof. Braschman said he had seen the formula, though very differently developed, in a recent number of *Silliman's Journal*.

10. Prof. Stevelly read the communication from Mr. Walker, who found that waves near the breakwater, in 36 feet water, moved faster, and were further apart, than those in 24 feet water and nearer the pier-head; but all those waves moving shoreward had their velocities diminished as they approached the shore. He found in one instance waves traversed 46 feet per second, and were 460 feet apart, breaking in five fathoms water; others had a velocity of 42 feet per second, were 442 feet apart; the height of the unbroken wave was 27 feet above the surface-level, and they broke in five and six fathoms. Others, again, had a velocity of 46 feet per second, the distance between them was 345 feet, and the height of the unbroken wave only five feet.

SECTION B.

Marquis of Northampton in the chair.

1. Prof. B. Powell, "On the Apparatus for applying circular Polarisation to Chemical inquiries."
2. Dr. Dalton, "On the Phosphates and Arseniates."
3. Dr. Dalton, "On Microcosmic Salt."
4. Dr. Dalton, "On a new and easy method of analysing Sugar."
5. Dr. Daubeny, "On the Agricultural importance of ascertaining the minute portions of matter derived from Organic sources, that may be preserved in the Strata; and on the Chemical means by which its presence may be detected."
6. Mr. Joule, "On the Electrical origin of the Heat of Combustion."
7. Dr. Daubeny, "On the causes of the Irregularities of Surface which are observable in certain parts of the Magnesian Limestone Formations of this Country."
8. Prof. Nasse, "On the Composition of the Blood and Bones of Domestic Animals."

1. Prof. Powell's paper recommended a simplified apparatus for the experiments referred, instead of the complicated machine heretofore in use.

2. Peter Clare read the three papers by Dr. Dalton, which led to many tributes of applause being paid to the venerable chemist. In the second paper the doctor controverted Bergman's assertion, that microcosmic salt has a volatile alkali; it has only the mineral alkali. Since the atomic theory was discovered, various authors have given the atomic weights, some in 100 weights of the salts, and others in the acknowledged weight of the atoms—amongst others, Dr. Thomson, Dr. Henry, Dr. Wollaston, &c.; M. Gay-Lussac, Thénard, Dumas, &c. among the French; and Berzelius, Mitcherlish, &c. in Sweden and Germany. Dr. Dalton proceeded to remark on the different degrees of success which had attended the labours of these authors. The new method of ascertaining the quantity of water in the salts was then described; and the third paper, "On a new and easy method of analysing sugar," was read, in which the doctor's method of measuring the water of crystallisation was given. The doctor has a bottle that holds 572 grains of water up to the neck, and a nicely ground stopper, so as to be wiped clean and dry: this is to be filled with distilled water, and then poured into a convenient glass with a spout to it, that it may be reconveyed into the bottle again. One hundred grains of double-refined sugar, carefully weighed, are to be poured into the glass, and stirred about with a very slender stick of glass till it is all dissolved. It is then reconveyed into the bottle, taking care that there is not a drop lost; a little dexterity is required, but it is easily managed; the glass rod is to be regarded, and the best way is to stroke the glass rod till it is clean and dry. Then the remainder is to be poured into the narrow tube, and the number of grains is then read off. The narrow tube is to measure the grains of water and sugar overplus, or water itself, which is the same measure. The doctor generally used 100 grains for the prime experiment.

	100 sugar grains, dissolved in 572 water grains,
gave	672 grains by weight.
In specific-gravity bottle	606 grains.
In narrow tube	66 grains.
	672 grains by weight.

The specific-gravity bottle did not vary more than 606 or 607, or one grain at most.

3. Dr. Daubeny's important paper followed; and we are gratified at being able to give the only correct abstract of it. The researches of Sprengel and Liebig, by shewing the manner in which minute quantities of certain ingredients may impart to the soil into which they enter as constituents, entirely new properties with reference to the purposes of agriculture, have communicated additional interest to the methods of analysis which aim at determining the chemical composition of the superficies, and of the substratum from which the former principally derives its principal ingredients. The rude mechanical method adopted, even by such chemists as Sir H. Davy, is no longer considered sufficient. The nature as well as the amount of the organic matter present, and the existence of phosphates, &c. in the proportion of $\frac{1}{1000}$, or even $\frac{1}{10000}$ part of the entire mass, are points deserving investigation, and afford a clue to the description of manures most likely to be useful, and to the general treatment which the land may require. It is also obvious that the same importance attaches to a knowledge of the constitution of the subsoil, since the advantage of exposing to atmospheric influences, and thus disintegrating the portions underneath by deep ploughing, and other methods of bringing the subsoil to the surface, will, in a great degree, depend upon its containing ingredients which the crop requires for its subsistence, and of which the superficial soil has been already in a great degree exhausted. Thus, for example, it will often become a question with the farmer whether it will be more economical to mix with the soil a given quantity of phosphate of lime, or to incur the labour of so breaking up a portion of the subjacent rock as to unlock, as it were, for the use of the crop, that quantity which it contains in close union with its other constituents. This inquiry, however, presupposes a knowledge on his part of the existence of phosphate of lime in the soil, and of the relative proportion it bears to the other ingredients—data which can be only obtained through the assistance of refined chemical analysis. A few simple and easy calculations may shew how very small a proportion of this ingredient might suffice during a long period of time for the demands even of those crops which require the largest amount of it for their nutrition. Suppose the subsoil of a single acre of ground, turned up to the depth of a foot, to weigh 1000 tons: now, if this rock should be found to contain only $\frac{1}{1000}$th part of phosphate of lime, it will follow that no less than a ton of this substance might be extracted from the uppermost foot of the subjacent rock by the action of the elements, or by chemical means. Now one ton of phosphate of lime would be adequate to supply 125 tons of wheat, or 680 tons of turnips. And if we reckon the average loss obtained from an acre of land to be—of wheat 1 ton, and of turnips 15, it is evident that we have at hand as much phosphate of lime as would be necessary for 125 crops of the former, or for 45 crops of the latter. Dr. Daubeny said he had great reason to believe that many of our secondary rocks, those especially which contain organic remains, and which appear in a great measure to be made up of shells, would be found, if examined, to contain as large a quantity of phosphate of lime as that mentioned. This Dr. Daubeny inferred from various analyses of German soils made by Sprengel. Dr. Daubeny did not wish to assert that the soil of this country contains phosphoric acid in an equal proportion to these instances. The land in Germany is in general not benefited by the use of bone-earth in the same degree as that in certain parts of Great Britain, arising probably from the former being more generally than the latter provided in itself with a due supply of this necessary ingredient. Land which, like that of most parts of England, has been for many centuries in a regular course of cultivation, and of which the produce has in great measure been carried off the premises to supply the demands of our large commercial cities, will be likely to retain a smaller stock of this and other of its ingredients which supply food to the plants, than that of other countries in a less artificial condition would do. Though the soil of Great Britain be found deficient in the phosphates, there is reason to believe the subsoil might in many cases be made, by proper management, to impart to it what is wanting. It is now some years since the discovery by Dr. Buckland, in the lias and other secondary rocks, of the solid fæces of certain extinct animals, consisting of phosphate of lime, induced

Dr. Daubeny to test a variety of specimens of limestone, with a view of ascertaining whether traces might be found in them of the same ingredient. The result was, that phosphate of lime, in minute quantities, was much too commonly distributed to be attributed to cuprolitic matter, or to afford any independent evidence of its presence. When, indeed, we recollect that the shells of invertebral animals contain from three to six per cent of phosphate of lime, and that, according to Mr. Connel, the scales of extinct fish taken from rocks as old as the coal-formation, possess no less than 50 per cent of the same ingredient, it would be wonderful indeed if all traces of this substance had disappeared from rocks which appear often to be made up, in a great degree, of the debris of shells, and other marine exuviæ. Dr. Daubeny was therefore not surprised at being informed by the skilful chemist who is entrusted with the management of the German Spa at Brighton (M. Schweitzer), that he had detected, in the chalk of Brighton Downs, as much as $\frac{1}{1000}$th part of phosphate of lime. From experiments since made by Dr. Daubeny in the same rock, taken from various localities, as, for example, from Sudbury in Suffolk, from the neighbourhood of Portsmouth, and from the Isle of Wight, he was inclined to believe, that minute portions of this substance are present not uncommonly in that formation. Dr. Daubeny proceeded to describe the method of analysis he had adopted to determine the presence of this substance. Having dissolved a given quantity of the limestone in muriatic acid, and boiled the solution in order to expel any carbonic acid that may be retained by it, Dr. Daubeny decanted the liquid into a stoppered bottle, and added to it pure ammonia. Should any precipitate be occasioned, it is collected in a filter, and carefully washed; it is then washed with acetic acid and filtered, and the phosphoric acid is lastly thrown down from its solution by means of acetate of lead, and is then dried and weighed. As alumine is not soluble in acetic acid, we may in this manner assure ourselves that the precipitate with ammonia was not occasioned by any portion of that earth that might have been dissolved by muriatic acid. The absence of iron may be inferred by its appropriate test, and likewise by the flocculent appearance of the precipitate. The frequent occurrence of phosphate of lime in calcareous rocks, and the probability of its having been derived from the shells or bony matter of the living beings contained in the calcareous rock, led Dr. Daubeny to suspect that traces also of the organic matter which contributed to make up the animal structure, might likewise be found accompanying it. To determine this in cases where the proportion was too small to be estimated in a more direct manner, it occurred to the doctor to avail himself of the property possessed by nitrate of silver, of becoming black on exposure to light. This blackening is entirely dependent on the presence of organic matter, or at least of some form of carbon; so that, if we dissolve the salt in distilled water, and then expose it to light, the liquor becomes at first dark, owing to the presence of minute quantities of vegetable matter taken up by the steam. But if this be allowed to settle, and the liquor decanted off, it may remain for any length of time exposed to the air without any discoloration ensuing. By adding, then, a little of the salt of silver so prepared to a solution of the limestone in nitric acid, the doctor hoped to ascertain whether organic matter was present in it or not, since in these cases alone a discoloration can be expected to take place. It was necessary, however, to ascertain whether mineral carbon in the form of bitumen, or in any other state, was present, since in that case a darkening of the solution would occur altogether unconnected with the presence of organic matter. This, however, would detect itself by the external character of the specimens in which it occurred, and also by the colour of its solution. There seemed no reason, therefore, to suspect its presence either in cases where the solution was perfectly transparent, or, if turbid, was reddish or yellow from the mere presence of iron or of other impurities not carbonaceous. The doctor had applied his test to about fifty different specimens of limestone selected from his cabinet, and found that whilst the solutions of the pure white marbles, such as that of Carrara, continue unaffected, the equally pure and white limestones taken from the chalk and tertiary formations in general became distinctly darkened by the addition of nitrate of silver. Dr. Daubeny adduced some facts to prove that the test is of considerable delicacy, and likely to succeed in cases where ordinary means might fail, and proceeded to draw the attention of the meeting to his specimens. He classified the limestones he had examined under three heads. The first comprised those which do not afford any marks of having been affected by nitrate of silver, and were marbles from Glen Tilt, from Carrara, from the Isle of Wight, and included a hard chalk resembling marble from Antrim, taken close to a basaltic dyke. The second division contained those in which the specimen was darkened, but in which, from the presence of mineral carbon, the indications afforded are inconclusive. These were limestone interstratified with talc slate; ditto subordinate to mica slate, &c. The third division embraced those in which the specimen appeared to be destitute of mineral carbon, and consequently produced with an acid a solution either colourless, or of a light colour, but which, with nitrate of silver, became dark on exposure to light. These specimens included, among others, white magnesian limestone from Arran, Jura limestone, chalk from Antrim, Sudbury, the Isle of Wight, and Sussex, tertiary limestone from Styria, and recent oyster-shells, not calcined. Dr. Daubeny then read a letter from Mr. Schweitzer, who had been precluded from employing the secondary limestones in obtaining carbonic acid wherewith to impregnate his mineral waters owing to an empyreumatical odour which the gas carried up, and which he attributed to an organic cause. To obtain a perfectly pure carbonic acid for his imitations of the spas of the Continent, he was compelled to resort to the pure kinds of marbles. Dr. Daubeny said that his test gave no means of distinguishing whether the organic matter be derived from animal or vegetable exuviæ. Some means of determining this were explained. With regard to the presence of organic matter in the subsoil, its detection may be a matter of some agricultural interest, when we remember that the small quantities of nitrogen which are required for the growth of those vegetables that first start up in a new country could not have taken place from an accumulation of mould by the decay of antecedent plants, but have been derived in a great measure from the animal matter which is contained in the rock upon which they grew, and which proceeds from the exuviæ of races of beings belonging to a former period of creation. In a more advanced period of vegetation, this same material may be of some value to the crops that occupy the soil. Dr. Daubeny suggested whether the more compact texture of certain calcareous rocks than of others might not be connected with the existence in them of organic matter, which by its interposition may prevent a crystalline arrangement of its particles from taking place. It may be that the attraction between the particles of matter, which, if uncontrolled, would prove too powerful for the agents of decomposition to overcome, may be weakened by the presence of organic matter, and thus be enabled to supply the vegetables that take root in it with the solid matter which their structure requires. To the geologist, too, it cannot but be of interest to trace the several steps by which the organic matter, which primarily must have constituted so large a portion of the bulk of the various extinct animals and vegetables, have disappeared from the strata which enveloped them—to observe that this material, far from bearing any uniform proportion to the degree of perfection with which the form of the animal is preserved, is often wanting where the shell is in the most perfect condition—that it is in general most common in the tertiary and in the newer secondary rocks, whilst in the older ones it would seem to be often replaced by mineral carbon, derived perhaps from the decomposition of organic matters, in consequence of the operation of heat and the other changes to which the rocks have been subjected—and, finally, to obtain a new proof of the alterations occasioned by igneous agency in the obliteration of all traces of organic matter from rocks elsewhere charged with it, as shewn in its entire absence from the chalk of Antrim, taken from the immediate contiguity of a basaltic dyke. Dr. Daubeny concluded by saying, that he was unwilling to pursue these speculations further, both on account of the limited amount of data on which they at present rest, and also because he should prefer waiting to learn the opinion of other chemists with respect to the trustworthiness of the method of examination he had employed, before he proceeded to erect a superstructure upon foundations whose soundness might be contested.

The Marquis of Northampton hoped the experiments made by Dr. Daubeny would be carried on by agriculturists.

Dr. Playfair said the credit of these important discoveries, which was claimed by two foreign chemists, exclusively belonged to Dr. Daubeny. There was reason to believe there was phosphate of lime in every fertile soil, although it could not be shewn.

Mr. W. Hall wished, as a question of practical interest, to know whether the doctor's discoveries would influence the mode in which calcareous matter was applied to the soil so as to increase the fertilising effect.

Dr. Daubeny said he doubted whether, in ordinary cases, the small quantity of organic matter which limestone contains could be of great importance; still, it was useful to know from what the first vegetables derived the nitrogen they required.

Mr. W. Hall said that sand from the sea-coast, possessing a proportion of shells containing organic matter, was beneficial in the way pointed out. The phosphate of lime, which was deficient in soils, it might be necessary to supply.

The chairman and Dr. Bevan of Dublin said each a few words on the valuable contribution to agricultural chemistry just made by Dr. Daubeny.

6. Mr. Joule had sought to account for the heat evolved by the combustion of certain bodies on the hypothesis of its arising from resistance to the conduction of electricity between oxygen and the combustibles at the moment of their

union. Taking this view of phenomena, he shewed that the heat evolved by the union of two atoms is proportional to the electro-motive force of the current passing between them—in other words, to the intensity of their chemical affinity. Mr. Joule proceeded to treat of one metal, copper, not noticed in his former paper, and explained the manner in which he had obtained the theoretical results for it. He alluded, in passing, to the fact, that pure water is not at all decomposed by ten pairs of Smee's battery in series, the current being thereby almost, if not quite, cut off. A diagram gave the quantities converted into protoxides of potassium, zinc, iron, copper, and hydrogen, with Dulong's results and his own in parallel columns. Another column gave the theoretical results, and another the corrected theoretical results, which latter agreed very nearly with the experiments of Dulong and the author. An extensive series of experiments, conducted by Mr. Joule, seemed to indicate that heat is lost when light is evolved, but in so slight a degree, that his experiments on the heat of combustion needed not to be corrected for it. To sum up: the correctness of the idea, first stated by Davy, and supported by Berzelius, that the heat of combustion is an electrical phenomenon, is now rendered sufficiently evident; as well as that the heat arises from resistance to the conduction of electricity between the atoms of combustibles and oxygen at the moment of their union. Of the nature of this resistance we are still ignorant. Some time since, he (Mr. Joule) commenced an investigation on the heat arising from the union of sulphuric acid with potash, soda, and ammonia; but his experiments were not yet sufficiently complete to be brought before the Association.

7. Dr. Daubeny read his second paper. In the course of last autumn he was struck with the appearances presented by the magnesian limestone rock of some of the quarries on the eastern borders of Derbyshire. Both the upper and under surfaces of the blocks, instead of exhibiting that plane or slightly undulating outline which is commonly perceived in a block of stone consisting of limestone, were, on the contrary, chequered with a series of small alternate depressions and elevations, producing, both above and below, a number of sharp projecting points, or of little rounded protuberances, sticking out from the surface of the block. These appearances had been briefly noticed by Professor Sedgwick, who assumed that they arose merely from the arrangement of the particles of the rock, which took place in the act of its consolidation. Within the last few days, while on his way to Manchester to join the Association, the doctor had examined in detail some of the most remarkable quarries now worked in the magnesian limestone, in the part of the country in question. After describing some peculiarities in the blocks, he suggested that the appearances bore a recognisable resemblance to those produced on a vertical face of rock at Roche Abbey, which had been exposed to the elements for a considerable period of time. The vertical face of the stone presents a great number of holes, punctuating into the substance of the stone; shewing at least a disposition in the stone to be acted upon and corroded by atmospheric influences. Professor Sedgwick's explanation of these to the configuration which the stone spontaneously assumed during the act of consolidation may be the true one; but it seemed hardly admissible, without a more careful investigation of the phenomena, and a comparison of them with the principle assumed. Dr. Daubeny alluded to the dolomite of the Tyrol, as bearing out his views. The serrated and extraordinary peaks in certain valleys of the Tyrol were usually attributed to volcanic action; but they might perhaps be more truly referred to the action of the weather on the composition of the stone, which had not removed them in rounded masses, but in the shapes in which they were. The surface-blocks at Alston might be regarded as miniature representations of the serrated peaks of the Tyrol.

Professor Johnstone examined the specimens, of which, he said, he had met with none in his county (Durham). From the appearance they presented, Dr. Daubeny was probably right in referring them to the action of the carbonic acid of atmospheric influences.

8. Dr. Gilbert: Prof. Nasse's paper "On the composition of the blood and bones of domestic animals." The object of the professor's experiments has been to ascertain what changes the constituents of the blood undergo by the absorption of various substances, such as alkalis, acids, salts, iron, sulphur, and phosphorus; and also by variations of diet. He had performed a series of analyses of the blood of animals; and, in doing so, it was necessary frequently to repeat the experiment on the blood of each species of animal, in order to ascertain its normal state. The number of analyses was in no case less than five, and frequently as many as ten and more. The blood analysed was that of healthy animals only, fed in the ordinary way, except that of geese, which had been previously fattened. To render the results more valuable, Professor Nasse had added, by way of comparison, the analysis of the blood of healthy men. The first table gave the proportion of water, serum, albumen, fibrine, fat, and salts in the blood of man, the dog, cat, horse, ox, calf, goat, sheep, pig, goose, fowl. The salts were obtained by the calcination of the whole blood. The calculated quantity of fatty matter does not include that which was combined with the fibrine. The quantity so combined amounts to about 2·8 per cent of the fibrine. The second table gave the soluble salts of the blood, in 1000 parts; the third table, the unsoluble earthy matters, in 1000 parts. The quantity of magnesia and silica was determined by burning the blood in a copper crucible. From purely chemical evidence, we arrive at the conclusion, that the less iron and the more alkaline carbonates (that is to say, saltates) and fibrine the blood of any species of animals contains, the weaker will be the constitution of that animal, and the greater the tendency of its blood to the diseased condition. The same law holds good also with respect to the individuals of one and the same species. The variation in the composition of the blood of the horse demonstrates the truth of this statement. Thus, the blood of the English horse contains a large quantity of iron, and but little alkali and fibrine, when compared with that of the German horse; whilst the blood of the English horse is far less liable to disease than that of the latter. Prof. Nasse next examined the variation in the composition of the bones of wounded animals. In order to ascertain how far the composition of the bones is affected by the decline of nervous energy and of motive power, the professor selected three animals, and divided the sciatic nerve of the left side as near to its origin as possible. The animals employed were a full-grown rabbit, a dog of four months old, and a very old stag-hound. After seven months, during which time the young dog suffered from the distemper, the animals were killed, and the composition of the bones of the healthy, as well as the injured limb, was ascertained; the periosteum having been carefully scraped off, and the bones dried at 100 C. The weight of the dried bones of the rabbit was as follows:—

	Injured side.	Healthy side.
Thigh-bone	83·6 grains	86·55 grains
Leg-bone and bones of foot .	93·4 „	96·95 „
	177·0	183·5

The whole of the bones mentioned were submitted to analysis; and the results afforded were, that the deficiency of animal matter in the bones of the injured limb amounted to 1·65 grains, whilst that of the lime-salts is 5·15 grains. For the cleaning of the bones of the young dog, it was necessary to macerate them for two months; those of the wounded limb were somewhat less, lighter, and softer, and the periosteum was very lightly attached. The loss of weight of the bones of the injured limb (including those both of the leg and of the foot) were 59 grains, of which 44·53 grains are the earthy matters; and of that quantity 23·05 grains are carbonate of lime, of which, instead of 30·91 grains, there only remain 7·66 grains in the bones of the wounded limb. The deficiency is greater also in the bones of the foot than of the leg. Of the old hound, the four metatarsal bones only were subjected to analysis. Those of the maimed side were about three lines longer, and were somewhat thinner than those of the healthy side. Their specific gravity was also less even after the maceration and drying. The quantity of fat in the bone of the injured side is augmented just as is observed when muscles or nerves are wounded in any other manner.

	Wounded nerve.	Healthy nerve.
Water . . .	402	483
Fat . . .	443	317
Cellular tissue .	155	200
	1,000	1,000

The conclusion is, that the bones of injured limbs are deficient in their organic constituents; that is to say, their gelatine, and also in carbonate of lime. The quantity of phosphate of lime remains almost entirely unchanged; so that the supply of bone-earth to the limb has not been affected by the wound. On the other hand, the diminution of the quantity of carbonate of lime is most remarkable. The professor thought this phenomenon might be explained in the following manner:—When a limb is injured, the blood thickens in the substance of the bone; and blood in this state contains more carbonic acid than that which freely circulates. The liquid also from which the nourishment is derived must also be richer in that gas; and it is well known that the more carbonic acid a liquid holds in solution, the greater is the quantity of carbonate of lime which it can dissolve; so that, instead of diminution, deposition may take place. The liquid, too, taken from the injured part contains more than its normal quantity of albumen, whilst the presence of that body favours the solution of carbonate of lime. Moreover, if we would explain the variations of structure, we must also take into the calculation, that the more firmly the muscles are attached to the bone, the harder and firmer the bone will be. The increase of length and the decrease of thickness observed in the metatarsal bones of the wounded limb of the old dog, may also thus be perfectly accounted for. Dr. Playfair took occasion to notice the identity in the composition of the blood and the bones. It was worth while to remark, that the proportion of albumen contained in the blood of the animals most nutritious to man, was the same as that in the blood of man himself. Thus, the albumen in the blood

of man was 74·194; of the ox, the flesh of which was most nutritious to man, 74·45; of the pig, 74·80; of the goat, 62·905; of the goose, 48·695; of the fowl, 48·52. It would be well that the economic value of the flesh of the different domestic animals be ascertained.

SOUTH POLAR EXPEDITION.

THE following interesting intelligence was given in the last Number of the *United Service Gazette*:—We have been favoured with a sight of a letter from an officer of this expedition, dated the Falkland Islands, May 1, from which we extract the following details of the return of the expedition. It will revisit the ice next year. "The Erebus and Terror were at the Falkland Islands on the 1st of May last. They left New Zealand on the 23d November; entered the ice on the 18th December; were beset in it nearly seven weeks, but succeeded in taking up a position for exploring, near the place they retired from the summer before—about 78 degrees south—but were unable to add more than 80 or 90 miles to former discoveries. This was in a continuation of the great barrier of ice (connected with the volcano), which they still found stretching east and west; but they had the satisfaction of making seven miles more southing; for on the 23d of February, when they were compelled by the season to make their way northward, the ships were in latitude 78° 10′, longitude 162° 20′ W., within three or four miles of the barrier. They saw no land, although at one time they were driven within 100 miles of Franklin Island, where a landing was effected last year. They did not leave an hour too soon; for, before they got clear of the region of icebergs, dark nights overtook them; and on a stormy night, while hauling away from a cluster of them, both ships unavoidably came in contact. The Terror got off with the loss of some spars, but the Erebus lost her bowsprit and foretopmast: they, however, had a fair passage after, and arrived at the Falkland Islands on the 6th of April. One man belonging to the Erebus was unfortunately drowned off Cape Horn. Every one else was quite well. Captain Ross had appointed E. J. Bird to be commander of the Erebus; A. J. Smith to be lieutenant of the Erebus; and G. H. Mowbray purser of the Terror."

PARIS LETTER.

Paris, July 8, 1842.

Academy of Sciences: sitting of July 4.—The Academy elected a corresponding member to the chemical section: the list of candidates included the names of MM. Liebig, of Giessen; Henri Rose, of Berlin; Woehler, of Gottingen; Graham, of London; Doebereiner, of Jena; Kuhlmann, of Lille; Laurent, of Bourdeaux; Malaguti, of Rennes; and Persoz, of Strasburg. Out of 33 votes, 28 were in favour of M. Liebig.

M. Duvernoy read a paper on the shrew-mouse (sorex).

M. Amussat read a memoir on the possibility of establishing an artificial opening in the intestinal lumbar colons without opening the peritoneum.

M. Cauchy presented two memoirs on mathematical analysis.

M. Seigneurgens communicated notes on the cause and the means of arresting the ravages of variola. The author believes this malady to be due to an animal analogous to the acarus of the itch: he has not succeeded in seeing it, but he founds his opinion principally on the good effects of mercurial preparations to stay the disease.

M. Serres stated that this idea as to the nature of variola was not new; he himself had sought to realise it, but unsuccessfully; he had likewise used mercurial applications with advantage;—besides, this mode of treatment had been proposed long ago. Later observations have led him to admit, that local remedies acted by removing the parts affected from the action of the air: he has observed, that in obscure rooms, close and damp, small-pox has a milder character and a happier issue than in rooms of an opposite description. M. Serres announced also, that his experience has shewn him that vaccination should be renewed.

M. Dutrochet sent a supplemental note to his researches on the movements produced on the surface of liquids by the action, distant or in contact, of different substances.

M. de Gregory wrote that he had succeeded in inducing the Virginia nightingale to propagate in Europe: he had obtained five young ones from two nests,—the one in May, the other in June: hitherto all attempts had been in vain.

M. Gruby addressed a note on the entozoa of frogs. Parasites are very common among cold-blooded animals, but especially in the frog, in which M. Gruby has found them in the cellular tissue, the lungs, intestines, &c. &c. He has examined them minutely by microscope and by means of injection.

The widow of M. Chevalier sent a work on mushrooms, the publication of which her late husband had commenced. She expressed a desire that it may be completed under the auspices of the Academy.

Several communications relative to railways were received, and referred to the commission.

LITERARY AND LEARNED.

COPYRIGHT.

THE following letter from Mr. Dickens, on the subject of international copyright, will speak for itself. The writer's recent exertions in the cause in America are of the utmost importance; and we may regret that his return was not early enough to attend the meeting.

To the Editor of the Literary Gazette.

1 Devonshire Terrace, York Gate,
Regent's Park, 7th July, 1842.

Dear Sir,—You may perhaps be aware that during my stay in America I lost no opportunity of endeavouring to awaken the public mind to a sense of the unjust and iniquitous state of the law in that country in reference to the wholesale piracy of British works.

Having been successful in making the subject one of general discussion in the United States, I carried to Washington, for presentation to Congress by Mr. Clay, a petition from the whole body of American authors, earnestly praying for the enactment of an international copyright-law. It was signed by Mr. Washington Irving, Mr. Prescott, Mr. Cooper, and every man who has distinguished himself in the literature of America; and has since been referred to a select committee of the House of Representatives.

To counteract any effect which might be produced by that petition, a meeting was held in Boston—which, you will remember, is the seat and stronghold of learning and letters in the United States—at which a memorial against any change in the existing state of things in this respect was agreed to, with but one dissentient voice. This document, which, incredible as it may appear to you, was actually forwarded to Congress and received, deliberately stated, that if English authors were invested with any control over the republication of their own books, it would be no longer possible for American editors to alter and adapt them (as they do now) to the American taste!

This memorial was, without loss of time, replied to by Mr. Prescott, who commented, with the natural indignation of a gentleman and a man of letters, upon its extraordinary dishonesty. I am satisfied that this brief mention of its tone and spirit is sufficient to impress you with the conviction that it becomes all those who are in any way connected with the literature of England to take that high stand to which the nature of their pursuits, and the extent of their sphere of usefulness, justly entitle them; to discourage the upholders of such doctrines by every means in their power; and to hold themselves aloof from the remotest participation in a system, from which the moral sense and honourable feeling of all just men must instinctively recoil.

For myself, I have resolved that I will never from this time enter into any negotiation with any person for the transmission across the Atlantic of early proofs of any thing I may write; and that I will forego all profit derivable from such a source. I do not venture to urge this line of proceeding upon you; but I would beg to suggest, and to lay great stress upon the necessity of observing, one other course of action, to which I cannot too emphatically call your attention.

The persons who exert themselves to mislead the American public on this question—to put down its discussion—and to suppress and distort the truth, in reference to it, in every possible way,—are (as you may easily suppose) those who have a strong interest in the existing system of piracy and plunder; inasmuch as, so long as it continues, they can gain a very comfortable living out of the brains of other men, while they would find it very difficult to earn bread by the exercise of their own. These are the editors and proprietors of newspapers almost exclusively devoted to the republication of popular English works. They are, for the most part, men of very low attainments, and of more than indifferent reputation; and I have frequently seen them, in the same sheet in which they boast of the rapid sale of many thousand copies of an English reprint, coarsely and insolently attacking the author of that very book, and heaping scurrility and slander upon his head.

I would, therefore, entreat you, in the name of the honourable pursuit with which you are so intimately connected, never to hold correspondence with any of these men, and never to negotiate with them for the sale of early proofs of any work over which you have control; but to treat on all occasions with some respectable American publishing house, and with such an establishment only.

Our common interest in this subject, and my advocacy of it, single-handed, on every occasion that has presented itself during my absence from Europe, form my excuse for addressing you.—And I am faithfully yours,

CHARLES DICKENS.

THASO.

[From the notes of a recent traveller.]

THASO (Thasos), as seen from the sea, certainly surpasses the eastern isles of Greece, and the western coast of Corfu alone can vie with it in picturesque beauty. Indeed, I think that the palm would not be awarded to the sea-girt demesne of old Alcinous. The aspect presented by the Archipelagic islands to the

ship-borne spectator is, in general, dry and rugged; their naked rocks and bareheaded mountains declare how they have been stripped and beaten by the weather for many ages. And when we see even Delos grey, is it not time that her elder sisters looked old? But Thaso has all the freshness and foliage of a young isle, just risen by a Delian birth from the waves, blooming and luxuriant—the Aphrodite of the Ægean.

However, as the voyager's caique approaches the beach of Kastro—a hamlet, and a little scala, so called from a castle, now in ruins, hard by—he is soon reminded that the Ogygian, the ancient Thasos, had her part in the noble race, who, visiting many lands, left behind them in all memorials of their elegant civilisation. Before the keel grates on the marbly strand, displaced lids, and fragments of broken soroi, are visible beneath the clear waters; others are strewn awash on the shore. The first impression upon landing will be, that here was some favourite necropolis, tenanted by more than the island's dead—by the great of Thrace and Macedon, and strangers to the Thasian. Nor will it be weakened by our recollection of the fact, that the remains of the stern Roman, Cassius, were conveyed to Thasos from the camp at Philippi, here to have the last honours paid them. Besides the numerous debris of broken soroi, we find many which time and man have so far spared, that, although violated, they are not overthrown.

The first of these receptacles for the dead that lay in my path was lidless. A fire, too, had been made by the inscribed side, as if expressly for the annoyance of the curious in sepulchral legends. Would that Greece could claim among her more enthusiastic sons a fellow for Scotland's Old Mortality! I contrived partially to free the letters from the sooty coat that blackened them; but they were imperfect, and the inscription would not present itself in a very readable form.

ΑΤΡ. ΚΑΕΟΠΑΤΡΑ ΚΟΝΤΟΑΝΙ . . . . . Τ . . . Ι
ΣΟΡΟΝ ΕΚ ΤΩΝ ΙΔΙΩΝ ΕΜΑΤΤΗ ΚΑΙ ΤΩ ΤΙΩ . . .
ΡΙΩ ΜΟΤ ΑΤΡ. ΑΟΤΙΙΗ ΚΑΙ ΑΤΡ· . . .
ΦΙΑΑ ΚΑΕΟΠΑΤΡΑΣ ΜΗΑΗΝΑ. . . .
ΕΣΟΝ ΑΠΟΘΕΣΘΑΙ . . . .
ΝΟΜΟΝ ΝΟ . . .
ΜΕΝΗ.

On a soros, ten feet and a half in height and nine in length, a mile from the walls:

ΜΑΚΕΔΟΝΙΑ ΑΡΙΣΤΟΔΗΜΟΤ ΓΤΝΗ ΔΕ ΠΑΙ-
ΣΤΡΑΤΟΤ ΠΑΙΣΤΡΑΤΟΣ ΔΙΟΝΤΣΙΟΤ Ο ΜΕΓΑΣ
ΕΤΙΠΟΣΙΑΡΧΗΣ
ΕΚ ΤΩΝ ΙΔΙΩΝ — ΧΑΙΡΕ.

ΑΙΔΙΟΣ ΔΙΟΓΕΝΗΣ ΔΗΜΟΣΘΕΝΟΤΣ
ΤΙΟΣ ΤΗΝ ΕΑΤΤΟΤ ΓΤΝΑΙΚΑ ΑΙΔΙΑΝ
ΜΑΚΕΔΟΝΙΑΝ ΤΗΝ ΑΝΘΟΦΟΡΟΝ ΚΑΙ ΔΙΣ
ΑΡΧΕΤΗΝ ΚΑΙ ΤΕΙΜΟΤΧΟΝ ΚΑΙ ΔΙΑ ΒΙΟΤ
ΣΤΕΦΑΝΗΦΟΡΟΝ.

On a soros, two and a half miles from Kastro:

ΠΑΝΚΡΑΤΗΣ.

On a high soros, just outside the city-wall:

ΠΟΛΙΑΔΗΣ ΣΩΣΙΩΝΟΣ ΤΙΟΣ ΤΗΣ ΓΕΡΟΤΣΙΑΣ
ΚΑΙ ΑΡΧΙΕΡΕΤΣ — ΧΑΙΡΕ.

The seaside is truly a *Δημητερος ακτη*, in the less common acceptation of the phrase. Its crops of maize grow luxuriantly to the water's edge, and the soil has all the richness which the Georgic bard informs us the Thasian vine loved:

"Sunt Thasiæ vites,
Pinguibus hæ terris habiles."

This is very well for the agriculturist; but it operates somewhat untowardly for the antiquary. The soroi on the level space are now found at considerable distances apart: they would seem to mark the original extent of the cemetery; but it must once have been much better furnished, and we may justly lay to the husbandman's charge the removal of such impediments to his labours. Most probably the greater security of an insular situation, and the abundance of white marble, induced many of the Greeks resident on the mainland to send hither for sepulture the remains of deceased relatives.

The low ground bounded in front by the sea, and shut in by a half circle of finely wooded heights, was not wholly occupied at any time by the city for the dead. It had also a city for the living—a marble city. A portion of the fortified wall, some eight feet in height, remains, partially concealed by brambles and rank weeds: it, too, was built of white marble. An acropolis, boldly placed, crowned the steep and abrupt headland that divides a romantic cove from the bay of Kastro, and commanded the port, the city, and the adjacent plain. This work was connected by walls with the lower fortifications. As we clambered up the hillside, startling the goats that browse on its brushwood, we stumbled upon many old foundations. What yet stands of the walls of the ancient citadel consists of large, well-squared, and, in their respective courses, equal blocks of stone and marble, laid, in the manner of the early Hellenic engineers, without the aid of cement. Upon such foundations we now find the meaner masonry of a ruined castle—probably the hasty work of those warlike adventurers whom in the middle ages the republics of Italy sent forth to infest these seas. The view from this point is exceedingly beautiful.

I walked by a steep but shady path to the village of Panaghia, the principal on the island. Its situation, high on the seaward and concave face of a mountain, finely clad—here with rich vineyards, there with picturesque woodlands—is charming. All but man thrives at Thaso. The Thasians have not propitiated Hygeia; and, amid all this beauty, the plant *man* declines. The living live not here to a good old age; but it is a lovely spot for the repose of the dead.

I had hoped to meet with more than epitaphial inscriptions, but I was disappointed. The Panaghiote villagers, and their chief papas, knew of no relics of heathen antiquity but those near Kastro. In the village-buildings they had not a single stone with grammata. It was easier to quarry in their own immediate neighbourhood than to drag up from Kastro the materials of the ruined city. Most probably the finest blocks of marble have been removed by sea to cities on the continent of more recent date.

G. R. L.

SKETCHES OF SOCIETY.

MANNERS IN NEW ORLEANS.

A WEEKLY New Orleans paper, called *The Picayune* (May 9), affords the following sketches of society on the mighty Mississippi. The first quotation shews that the criminal statistics of London are not without a parallel of precocious cleverness in the other hemisphere.

"The few boys in New Orleans cut adrift from the anchor of a parent's protection and set afloat on the sea of uncertainty, are here called 'wharf-rats.' They are a shrewd, cunning class, who pilfer about the Levee during the day, and sleep under or about the wharfs at night. They are hard and fiendish in their features, and invariably chew tobacco or smoke worthless segars.

Tommy Timmins, one of the fraternity, was brought up Saturday before the Recorder on the charge of forcibly taking from an up-countryman a one-dollar municipality bill.

'State the grounds of your charge,' said the Recorder to the up-countryman.

Countryman. Well, I aint goin to make a great muss about it. My dollar-bill was snatched out of my hand, when I pulled it out to pay a pedlar on the Levee for a penknife; and I found it in the possession of this boy.

Tommy Timmins—(such, the prisoner said, was his name)—Now, look here, mister, you have kist that ere book, so look out. You does'nt mean to say, as I stole your money?

Countryman. I mean to say that my money was snatched out of my hand, and I found it in your possession.

Tommy. Vell, that aint legal evidence: I did'nt take it and carry it away, and don't come within the prowisions of the statur.

Recorder. But you must account for the manner in which you came by it.

Tommy. Certainly I will. You see, I was on the Levee, just thinkin on nothin at all, ven I sees Jim Jones a runnin up, just as quick as if he was running for a doctor to restore a drowned man to life. Hellow, Jim, I says, vy you've got up steam; what are you arter? You aint running against time, like George Washington Dixon, be you? "*Nix*," said Jim. Vich means, your honour, shut up your tater-trap; and, with that, he throws me the dollar-bill, and kept running right on.

Recorder. But were not you in his company when he ran away with this man's dollar-bill?

Tommy. No, your honour, I'm as hinnocent of the hact as the babe wot's unborn. I is'nt wot they calls in the Criminal court a partisex criminibus (*particeps criminis*).

Recorder. O! then you have been before the Criminal court?

Tommy. Never but once, your honour! and then I was'nt found guilty, because as how there was a flaw in the indictment: it wan't accordin to Cocker.

Recorder. Well, I shall take this man's affidavit against you. In the meantime I will send you to the workhouse; and while you are there, I will see if I cannot make something better of you than a Wharf Rat.

Tommy. Vell, I protests against it; it's a violation of a citizen's rights.

Tommy was sent down to pick oakum, or do aught else which the governor of the workhouse deems fit employment for him."

The next is a sample of newspaper editorial politeness: the writer describes his compeers, and says that Hagan (one of them, and before he became an editor as mild as the gentle Desdemona) proceeds thus:

"Now that same man breakfasts on ball-cartridges and dines on Paixhan shot, while the commonest words in his vocabulary are *beast, scoundrel, thief*, &c. Our brethren in Mississippi must 'reform it altogether.' We cannot permit them to go on in this way any longer; 'tis high time for repentance and reformation. Take notice, all you Mississippi editors—lights of the age as ye *ought to be*, blackguards as ye *are*—we proclaim ourself a missionary among ye! Give heed to the error of your ways; ask pardon for your sins; and cry out lustily, as did the offenders of old, 'What shall we do to be saved?'"

The facility of divorce has led to so frequent a use of that remedy for matrimonial discomforts, that it is stated—half in joke, half in earnest—a man sued for a separation, because his wife was in the habit of sweetening his tea with *brown sugar* instead of *white*. It is not said how the trial ended. At the last Cincinnati, Ohio, Sessions, there were 46 applications,

of which 20 were granted, 12 dismissed, and 14 continued.

"*Shadows of Time.*—The people of the East measure time by the length of their shadow. Hence if you ask a man what o'clock it is, he immediately goes into the sun, stands erect, then looking where his shadow terminates, he measures his length with his feet, and tells you nearly the time. Thus the workmen earnestly desire the shadow, which indicates the time for leaving their work. A person wishing to leave his toil, says, 'How long my shadow is in coming!' 'Why did you not come sooner?' 'Because I waited for my shadow.' In the seventh chapter of Job we find it written, 'As a servant earnestly desireth his shadow.'"

THE DRAMA.

Haymarket.—On Monday an adaptation from *L'Oncle Baptiste*, in which Bouffé made so great an impression, was played here. Farren, whom we have seen only once before in a part of this kind, exerted himself beyond himself to render the character as striking on the English as it has been on the French stage. His performance of *Paul Britton* is, in truth, clever rather than pleasing. The pathetic, if in the least continuous, is not Farren's forte. A dash of feeling in comedy no one gives better; but tears, and sighs, and bursts of passionate self-reproach, come not well and naturally from him; he does not produce the desired effect. This is seen by many of the audience laughing when they should sympathise. Of Mrs. Glover's proud and touchy, yet right-minded, Scotchwoman, we will only say it is on a par with every thing she attempts; and though but a part in a farce, has been by her thought worthy of careful study, and is, consequently, a genuine and natural portraiture. Strickland, Howe, Tilbury, Vining, Worrell, and Mrs. E. Yarnold, are efficient aids. The farce was well received.

Hanover Square Rooms. — Mdlle. C. Dubray's morning concert on Thursday was well attended. The programme contained, among others, the names of the Ronconis, Jullien and Benedict. The music was various, and well selected and executed.

VARIETIES.

History of a Bubble Company.—"Instituted in 1839"—suspected in 1840—blown up in 1841—bolted in 1842,—and there an end.

Mr. Haydon has nearly finished his picture of "the Heroine of Saragossa," which is to be the prize of a raffle,—and a prize well worth contending for, as we may judge from such persons as the Dukes of Bedford, Devonshire, and Sutherland, Lords Palmerston, F. Egerton, Spencer, and other noblemen, being among the shareholders. Indeed, it promises to be one of the artist's best productions; and in all he does produce we ever see the marks of genius.

The Horticultural fête on Saturday, and the last of the season, was rather a poor affair. The weather was unpropitious, and the company neither numerous nor select. The *oi polloi* prevailed; and the show of fruits and flowers was not of a superior order.

Third Crusade.—In our review of Allen's *Battles of the British Navy*, we made a reference respecting the sailing of Richard I. on the third Crusade, where he states that the port whence he sailed is not recorded. We are inclined to think that he sailed from Versailles, after having met the French king with his force at Vezelai, when they marched together to Lyons, and the French king took the road to Genoa, Richard to Versailles.

The Fine Arts and Education.—On motions by Mr. Hume and Mr. Ewart, in the House of Commons on Thursday, a strong and general expression of opinion was elicited in favour of throwing public places more open to the people; and of furthering the useful study of designs, &c., by planting schools in the great manufacturing towns.

Chinese Collection.—A glance at this superb collection has impressed us with a high opinion of the interest and value attaching to the "thousand things" brought together and arranged by Mr. Dunn to illustrate the social and industrial habits of an extraordinary people. What Catlin did for the Red Indians, Dunn has accomplished for the Chinese,—introduced them, with their customs, costumes, daily occupations, &c., to the untravelled traveller. A visit to the Indian Museum afforded readily as intimate an acquaintance with the red tribes as a ramble for months over the prairies of the Far West; and a few hours spent in the spacious and commodious room near Hyde Park corner will supply as much information on the peculiarities and social practices of the Chinese as a lounge in the streets of Canton. Specimens of the productions and natural history of the Celestial Empire are in the collection; but in this brief notice we can only recommend—in an early number, by a description of the numerous attractions, we will tempt, our readers to see for themselves.

Mummy-Corn. —The *Bath Chronicle* states that a specimen of Egyptian wheat, from a mummy imported in 1839, is now growing luxuriantly in the garden of the Botanical Society there. The ear is very large, and surrounded by off-shoots. The grain is of the awned kind, and fifteen ears have sprung from one seed. The stalks are very strong, and the plant promises to ripen well.

Calligraphy.—The annual competition for the gold medal, silver medal, and silver pen, given by Mr. Craik for the promotion of the art of penmanship in Great Britain and Ireland, took place on Friday the 8th instant, in the writing-department of the celebrated academy of the royal burgh of Dumfries. After a keen contest by George Dean, David Dunbar, and Robert Kirkpatrick (each of whom had gained the silver medal in former competitions), it was decided by the judges in favour of Master George Dean; 2d prize, silver medal, awarded to Master James Payne; 3d prize, silver pen, to Master William Graham.*

Another Earthquake in Scotland. — A pretty smart shock of an earthquake was felt last Sunday, about midday, by the congregation assembled in the cathedral church of Dumblane, which is about eighteen miles from Comrie. The shock occurred just before the dismissal of the congregation in the forenoon. Volcanic agency has for some time been suspected to be at work in this locality; and the instruments indicated the direction to have been in a line from north-west to south-east.

LITERARY NOVELTIES.

In the Press.—Notes of a Tour in the Manufacturing Districts of Lancashire; in a Series of Letters to his Grace the Archbp. of Dublin, by Dr. W. Cooke Taylor.

* The *Dumfries Times* contains a long account of the annual examination of this well-conducted and flourishing school, which may be instanced as one of those Scottish institutions where education is instilled in the best manner, under the immediate inspection of the clergy and magistracy of the place and neighbourhood.

LIST OF NEW BOOKS.

An Easter-Offering for the Whigs, from Archdeacon Bathurst; being a Supplement to the Memoirs of the late Bishop of Norwich, 8vo, 8*s.*—Twelve Letters from a Country Clergyman to his Parishioners, by the Rev. John Simons, 12mo, 2*s.*—The Elements of Perspective, and Projection of Shadows, by W. Barnes (of St. John's, Cambridge), 12mo, cloth, 2*s.* 6*d.*—Morison's Views of Haddon Hall, fol. 34*s.* cloth; coloured, 10*l.* 10*s.*—Family Essays on the Creation, Preservation, and Government of the Universe, intended for the Evening of every Sunday throughout the Year; each Essay followed by an appropriate Prayer, 8vo, 10*s.* 6*d.* — Jacob's Well, by the Rev. Geo. A. Rogers, 12mo, 4*s.* 6*d.*—Plain Parochial Sermons, by Rev. W. Buswell, 12mo, 6*s.* — Private Thoughts on Religion and a Christian Life, by Wm. Beveridge, D.D., 12mo, 4*s.* 6*d.* — Introduction to the Study of the Bible, by George Tomline, D.D., 12mo, 3*s.* 6*d.*, new edit. — Life and Times of Louis Philippe, King of the French, by Rev. G. N. Wright, 8vo, 16*s.*—The Pulpit, Vol. XLI., 8vo, 8*s.* 6*d.* cloth. — The Synagogue and the Church, condensed from the original Latin work of Vitringa, by J. L. Bernard, 8vo, 7*s.* 6*d.*—Popular Scottish Biography, by William Anderson, Esq., 12mo, 10*s.*—Guide to the Highlands and Islands of Scotland, by G. and P. Anderson, 12mo, 10*s.* 6*d.*—The Little English Flora, by G. W. Francis, 12mo, 7*s.* — The Book of the Farm, by Henry Stephens, Vol. I. royal 8vo, 1*l.* 10*s.*—Tales of the Braganza, by T. H. Usborne, post 8vo, 9*s.* 6*d.* — The Book of Proverbs explained and illustrated, by Benjamin Nicholls, M.A., 12mo, 2*s.* 6*d.*—Village Lectures, by Rev. W. C. Dowling, 12mo, 3*s.* 6*d.* —The Art of Conversation, by Capt. Orlando Sabertash, fcp. 3*s.* 6*d.*—Battles of the British Navy, by Joseph Allen. 2 vols. sm. 8vo, 21*s.*—Paris Estafette; or, Pilferings from the Paris and Dover Post-Bag, 12mo, 6*s.*—A Topical Index to Scott's Bible, 4to, 6*s.*; imp. 8vo, 4*s.* 6*d.* —Lectures on Personal Religion, by T. E. Hankinson, fcp. 2*s.* 6*d.*—E. Bickersteth on Christian Truth, 24mo, 2*s.* 6*d.*—C. Le Vert's System of Teaching Languages, 12mo, 5*s.*—Sir Alex. Crichton's Commentaries on Medicine, 8vo, 9*s.*—Hastings considered as a Resort for Invalids, by James Mackness, post 8vo, 4*s.*—A Case of Carcinomatous Stricture of the Rectum, by Alfred Jukes, 4to, 3*s.*—The Churchman's Brief Manual of Baptism, by Rev. Charles E. Kennaway, 12mo, 4*s.* 6*d.*—The Seven Churches of Asia, by Rev. J. A. Wallace, 12mo, 3*s.* — A Guide to Happiness, by C. F. Trufort, 18mo, 2*s.* 6*d.*—Little Coin, Much Care, by Mary Howitt, 18mo, 2*s.* 6*d.* —The Kingdom of Christ, by F. D. Maurice, 2 vols. post 8vo, new edition, 21*s.*

METEOROLOGICAL JOURNAL, 1842.

June.	*Thermometer.*	*Barometer.*
Thursday . . . 30	From 53 to 70	29·91 to 29·79
July.		
Friday 1	„ 49 .. 62	29·72 ... 29·82
Saturday . . . 2	„ 49 .. 63	29·82 ... 29·86
Sunday 3	„ 47 .. 66	29·91 stationary.
Monday 4	„ 54 .. 73	29·75 ... 29·64
Tuesday 5	„ 58 .. 68	29·61 ... 29·80
Wednesday . . 6	„ 47 .. 64	29·96 ... 30·13
Thursday . . . 7	„ 42 .. 61	30·08 ... 29·94
Friday 8	„ 49 .. 64	29·78 ... 29·61
Saturday 9	„ 47 .. 67	29·65 ... 29·69
Sunday 10	„ 48 .. 68	29·84 ... 29·86
Monday 11	„ 50 .. 74	29·69 ... 29 62
Tuesday 12	„ 53 .. 71	29·80 ... 30·00
Wednesday . . 13	„ 48 .. 70	30·08 ... 30·14

Wind N.E. on the 30th ult.; N.W. on the 1st; South and S.W. on the 2d inst., and following days. On the 30th, cloudy and showery; 1st and 2d inst. showery, with intervals of sunshine; 3d, morning clear, afternoon cloudy; 4th, rain in the morning, otherwise generally clear; 5th and 6th, generally clear; 7th, 8th, and 9th, cloudy, with rain; 10th, and three following days, generally clear. Rain fallen, ·62 of an inch.

Edmonton. CHARLES HENRY ADAMS.

TO CORRESPONDENTS.

Literary Gazettes wanted. — Any one having incomplete sets of the *Literary Gazette*, and the following Parts or Nos. to dispose of, will oblige us by sending them to our Publisher:—

March and May	1826
July and August	1827
May, July, August, Sept., and October .	1829
January and December	1830
July	1831
February and May	1832
Feb., March, Sept., October, Nov., and Nos. 881 and 882	1833
March, April, May, and December . .	1834
March and December	1835
Jan., July, Aug., Sept., Oct., Nov., & Dec.	1836
January, February, and March . . .	1837
February, March, and October	1838

We are obliged to postpone Mr. Bain's letter.

The tickets for Herr Bohrer's morning concert on Wednesday reached us too late for use.

ADVERTISEMENTS.

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cannot be denominated of the present fashion or period; it is, however, in the best taste, and excellent of its time, and comprises the appropriate fittings of the noble range of drawing and reception-rooms;

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Guido	Backhuysen	K. du Jardin
Poussin	Both	Berghem, &c.

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N.B. All the other sorts of the Perryian Pens at the usual prices.

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FIVE MILLIONS SIX HUNDRED THOUSAND POUNDS.

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The President, Vice-President, and Trustees are all connected with the Society by Assurances of at least three years' standing.

The general principles of this Society are now so almost universally known and appreciated, that it is unnecessary to do more in this form than to request a perusal of the lately published Prospectus, from which will be seen the very great addition which, during the last few years, has been made to the number of members, as the best practical evidence that can be had of the increasing estimation in which it is held by all classes of the community; and as in the present day so much is said of the large additions given by Life Offices, and as each contrasts with its own the rate divided by others, it may be well to state thus generally, that whilst the Society at last periodical investigation declared a Bonus addition at the rate of two per cent per annum on the accumulated amount of the original sum assured, and the previously declared Bonus, that addition was in the case of the early Policies upon the original sum assured alone at the rate of nearly two and three quarters per cent per annum of retrospective Bonus from 1831 to 1838, and upwards of three per cent per annum of contingent prospective Bonus from 1838 to 1845.

Every information may be readily obtained, on application to the Manager at Edinburgh, or to any of the Society's Agents throughout the country.

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Sum Assured.	Time Assured.	Sum added to Policy.
£1000 .	6 Years 10 Months .	136*l.* 13*s.* 4*d.*
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1000 .	1 Year . . .	20 0 0

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The salary is Fifty Guineas per annum, with a dwelling-house adjoining the Museum, free of rent and taxes, and coals provided: there are not any perquisites.

The whole time of the Keeper must be exclusively devoted to the Society, and it is indispensable that he be well acquainted with the general management of a Public Museum, as regards the preparation of specimens in Natural History, especially the setting-up of the skins of birds and other animals.

Satisfactory Testimonials as to character and fitness will be required, which must be addressed to the Honorary Secretaries of the Literary and Philosophical Society, Halifax, Yorkshire, on or before the 31st instant.

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By order of the Senate,
R. W. ROTHMAN, Registrar.

Somerset House, 5th July, 1842.

DR. DALTON and the BRITISH ASSOCIATION.—Copies of the Medal struck in honour of Dr. Dalton, and in commemoration of the Meeting in Manchester of the British Association, by the Proprietors of BRADSHAW'S JOURNAL, are on Sale at Mr. W. J. Adams's, 170 Fleet Street, London.

A copy of this Medal, in gold, was presented by the Publishers to Dr. Dalton on the 16th of June last, in the presence of the Mayor of Manchester and a select number of the Members of the British Association. As a likeness it is pronounced perfect, having been reduced from the statue by Chantrey, and finished from Photographic Portraits recently taken. Copies may be sent by post at a charge of sixpence extra.

WILKIE STATUE.—At an ADJOURNED MEETING of the Committee, held at the Thatched House Tavern, St. James's Street, on Saturday, July 2,

The Right Hon. Sir R. Peel, Bart., M.P., in the Chair,

It was resolved:—That a Sub-Committee be appointed, under whose superintendence the Statue shall be executed, and that such Committee consist of the following members:—

Sir Thomas Baring, Bart.	Peter Laurie, Esq.
His Grace the Duke of Buccleuch	Viscount Mahon, M.P.
John Bonnet, Esq.	Hon. W. Leslie Melville.
Sir A. W. Callcott, R.A.	Sir Moses Montefiore.
Allan Cunningham, Esq.	Sir W. J. Newton.
Peter Cunningham, Esq.	Thomas Phillips, Esq., R.A.
Henry Hallam, Esq.	Samuel Rogers, Esq.
Rt. Hon. H. Labouchere, M.P.	Sir M. A. Shee, P.R.A.
Edwin Landseer, Esq., R.A.	His Grace the Duke of Sutherland.
Sir Peter Laurie.	

The Committee then proceeded to select the Artist; and at the close of the Ballot the scrutineers reported the numbers to be:—for Mr. Joseph, 26; for Mr. Campbell, 13; for Mr. Baily, 5; for Mr. Watson, 3; for Mr. Weekes, 2; for Mr. Lough, 0; for Mr. Marshall, 0: when the Chairman declared the election to have fallen on Mr. Joseph.

The Committee have great satisfaction in stating, that the Trustees of the National Gallery have acceded to the request of the Subscribers, that the Statue be placed in the Inner Hall of that Gallery.

ALLAN CUNNINGHAM, Hon. Sec.
PETER CUNNINGHAM, Assist. Sec.

Subscriptions (to be advertised) continue to be received by Sir Peter Laurie and Peter Laurie, Esq., Joint Treasurers, 7 Park Square; Allan Cunningham, Esq., Hon. Secretary, and Peter Cunningham, Esq., Assist. Secretary, 27 Lower Belgrave Place; the Union Bank of London, 8 Moorgate Street; 12 Argyll Place; 4 Pall Mall East; Messrs. Coutts and Co., Strand; and Messrs. Smith, Payne, and Smiths, Mansion House Street.

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In two vols. demy 8vo, with a large Map by Arrowsmith, and illustrated with Plates.

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** Part VII. of Abbotsford Edition on 23d July.

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